NUTRIENT, DISSOLVED OXYGEN, TRACE METAL AND RELATED MEASUREMENTS IN THE BRAS D'OR LAKES, 1995 - 1997

P.M. Strain, G. Bugden, M. Brylinsky, and S. Denny

Oceans and Environment Branch
Maritimes Region
Fisheries and Oceans Canada
Bedford Institute of Oceanography
P.O. Box 1006
Dartmouth, Nova Scotia B2Y 4A2
Canada

2001

Canadian Data Report of Fisheries and Aquatic Sciences 1073

Fisheries and Oceans / Pêches et Océans

Canada

101-07242/

Canadian Data Report of

Fisheries & Aquatic Sciences 1073

2001

NUTRIENT, DISSOLVED OXYGEN, TRACE METAL AND RELATED MEASUREMENTS IN THE BRAS D'OR LAKES, 1995 - 1997

by

P.M. Strain[1], G. Bugden[2], M. Brylinsky[3], and S. Denny[4]

[1] Oceans and Environment Branch, Maritimes Region, Fisheries and Oceans Canada, Bedford Institute of Oceanography, P.O. Box 1006, Dartmouth, Nova Scotia B2Y 4A2

[2] Science Branch, Maritimes Region, Fisheries and Oceans Canada, Bedford Institute of Oceanography, P.O. Box 1006, Dartmouth, Nova Scotia B2Y 4A2

[3] Acadia Centre for Estuarine Research, Acadia University, P.O. Box 115, Wolfville, Nova Scotia B0P 1X0

[4] Eskasoni Fish and Wildlife Commission, General Delivery Eskasoni, Nova Scotia B0A 1J0

©Minister of Public Works and Government Services Canada 2001
Cat. No. Fs97-13/1073E ISSN 0706-6465

Correct citation for this publication:

Strain, P.M, G. Bugden, M. Brylinsky, and S. Denny. 2001. Nutrient, dissolved oxygen, trace metal and related measurements in the Bras d'Or Lakes, 1995 – 1997. Can. Data Rep. Fish Aquat. Sci. 1073: iv + 52 p.

TABLE OF CONTENTS

ABSTRACT iv

RÉSUMÉ iv

INTRODUCTION 1

METHODS 3
- SAMPLING 3
- SALINITY 13
- DISSOLVED OXYGEN 13
- SULFIDE 13
- NUTRIENTS 14
- CHLOROPHYLL AND PHAEOPHYTIN 14
- TRACE METALS AND SUSPENDED PARTICULATE MATTER 14

RESULTS 15

ACKNOWLEDGEMENTS 20

REFERENCES 20

Appendix A. 22

Appendix B. 31

Appendix C. 52

ABSTRACT

The Bras d'Or Lakes are saltwater bodies located in Cape Breton Island in Nova Scotia, Canada, whose saline character derives from connections to the North Atlantic. Six surveys of the Bras d'Or Lakes were conducted between 1995 and 1997 to provide basic information on the chemical oceanography of the Lakes. A preliminary survey was conducted in September, 1995, followed by three more comprehensive surveys in the spring, summer and fall of 1996. Two additional surveys were conducted in spring and fall of 1997, concentrating on conditions in Whycocomagh Bay, Denys Basin and St. Peters Channel, areas of particular interest because of aquaculture activities. Measurements were made from discrete water samples for nutrients (silicate, phosphate, nitrate+nitrite, nitrite, ammonia), plant pigments (chlorophyll a and phaeophytin), dissolved oxygen, total sulfide, trace metals (cadmium, copper, iron, lead, manganese, mercury, nickel, zinc) and suspended particulate matter. Continuous vertical profiles of temperature, salinity, fluorescence, photosynthetically active radiation and dissolved oxygen were also collected. The report presents all the data from the discrete measurements, and some related information from the CTD profiles.

RÉSUMÉ

Les lacs Bras d'Or sont des plans d'eau salée situés dans l'île du Cap-Breton, en Nouvelle-Écosse, au Canada. Leur salinité est due à leurs liens avec l'Atlantique Nord. Six relevés des lacs Bras d'Or ont été menés entre 1995 et 1997 pour recueillir des renseignements de base sur l'océanographie chimique des Lacs. Un relevé préliminaire a été mené en septembre 1995, suivi par trois autres relevés plus détaillés au printemps, à l'été et à l'automne 996. Deux relevés additionnels ont eu lieu au printemps et à l'automne 1997, et portaient surtout sur les conditions dans la baie Whycocomagh, le bassin Denys et le canal St. Peters, des secteurs présentant un intérêt particulier à cause des activités d'aquaculture. Des échantillons discrets d'eau ont servi à la mesure de nutriants (silicate, phosphate, nitrate+nitrite, nitrite, ammoniac), de pigments végétaux (chlorophylle-a et phéophytine), d'oxygène dissous, de sulfure total, de métaux-traces (cadmium, cuivre, fer, plomb, manganèse, mercure, nickel, zinc) et de matières particulaires en suspension. Des profils verticaux continus de la température, de la salinité, de la fluorescence, du rayonnement photosynthétiquement actif et de l'oxygène dissous ont aussi été recueillis. Le rapport présente toutes les données des mesures discrètes, et certains renseignements connexes liés aux profils CTP.

INTRODUCTION

The Bras d'Or Lakes (Fig. 1) are a group of interconnected saltwater basins located in Cape Breton Island at the north-eastern end of Nova Scotia. They cover a total area of 1080 km^2, and have an average depth of ~30 m. There are a wide variety of physical environments in the lakes. Some areas are shallow and flat (e.g. Denys Basin, mean depth ~5 m); others are steep-sided and deep (e.g. St. Andrews Channel, whose depths reach ~280 m). Small ponds that are partially or completely isolated from the Lakes by sand and gravel barriers are found along the shorelines. Locally, they are known as barachois ponds. There are three connections between the Lakes and the North Atlantic. There is significant exchange only through the Great Bras d'Or, a long (~30 km), narrow (~1 km) channel that connects the Lakes to Sydney Bight, on the Nova Scotia side of Cabot Strait. The Great Bras d'Or has an average depth of ~20 m and a maximum depth of ~95 m. A shallow (~12 m) sill near its mouth further restricts water movement into and out of the Lakes. There is negligible flow through the second permanently open connection to the Atlantic, the Little Bras d'Or, which is located at the north-east end of St. Andrews Channel. The third connection to the Atlantic is through a seasonally operated lock at the south-eastern end of St. Peters Channel that connects the Lakes to Chedabucto Bay on the Atlantic coast of Nova Scotia.

A number of studies of the oceanography of the Lakes have been carried out: Geen (1965) and Geen and Hargrave (1966) studied the primary and secondary production at a few sites in the Lakes; Vilks (1967) studied benthic foraminifera; Krauel (1975) studied the temperature and salinity distributions and measured some currents; and Gurbutt and Petrie (1995) extended the analysis and interpretation of these physical data to describe the circulation in the Lakes. However, very few measurements of the chemistry of the Lakes have been made. Smith and Rushton (1964) measured dissolved oxygen levels in a number of the barachois ponds around the Lakes. Arseneau et al. (1977) measured a number of chemical parameters in surface waters in East Bay and the barachois pond at the northeastern end of East Bay, and dissolved oxygen profiles at one location in East Bay and several in St. Andrews Channel. However, the technology Arseneau et al. were using for most of the measurements (Hach test kits) did not have the sensitivity necessary to measure the concentrations normally found in salt waters. There is also some doubt about whether their dissolved oxygen data have been properly corrected to account for the dependence of the oxygen solubility on temperature and salinity.

When the Eskasoni Fish and Wildlife Commission approached staff at BIO for assistance in designing and executing a water quality study of the Bras d'Or Lakes, this lack of chemical data became apparent. To fill this gap, a series of surveys were designed and carried out. The first preliminary survey, 95908, conducted in September, 1995, included stations in Whycocomagh Bay, St. Patricks Channel, North Basin, Denys Basin, and a

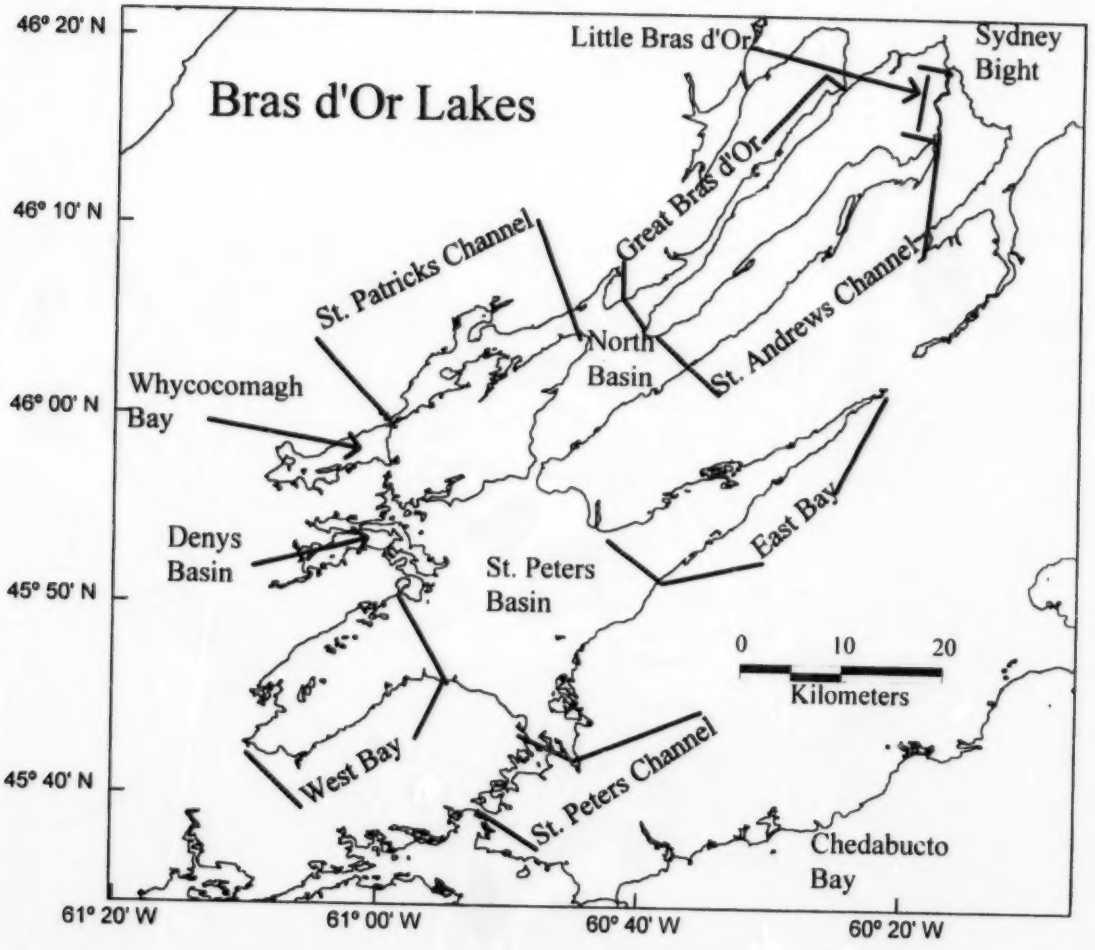

Figure 1. The Bras d'Or Lakes.

section from West Bay to East Bay across the southern basins of the Lakes (Fig. 2). Three more comprehensive surveys were run in the spring (96002), summer (96013), and fall (96002) of 1996 (Fig. 3-5). Chemical sampling on two additional surveys in the spring (97015, Fig. 6-7) and fall (97052, Fig. 8-9) of 1997 concentrated on Whycocomagh Bay, Denys Basin, and St. Peters Channel, areas of particular interest because of past or present aquaculture activities in these areas.

This report presents the chemical data and some selected CTD profiles from these surveys. All of these data are also available in electronic format and may be obtained from the Bedford Institute of Oceanography Data Archives. A description of the chemistry of the Bras d'Or Lakes, based primarily on these data, is now in preparation (Strain, 2001).

METHODS

SAMPLING

Water samples were collected from the stations shown on Figures 2-9, usually using 5-liter Niskin® bottles. Five-liter Lever Action® samplers were used to collect water samples for trace metals. The 95908 survey was conducted from the Eskasoni Fish and Wildlife Commission patrol boat, a small (~7 m) Cape Island style boat. Subsequent surveys were run from CCGS Navicula, a 20 m stern trawler/survey vessel. Because the draught of the Navicula prevents it from operating in some of the shallower or more isolated portions of the Lakes, some stations had to be run from a 5 m aluminum tender supplied by the Eskasoni Fish and Wildlife Commission that was carried on board the Navicula. Station positions were determined using a hand-held global positioning system (GPS) receiver (non-differential) on survey 95908 and for the stations sampled from the tender on the other surveys, and using the Navicula's differential GPS for all other stations. Sample depths were measured using a meter wheel, or a calibrated hand-line from the tender. Station depths were determined from the sampling vessel's sounder. On the 1997 surveys, a number of the streams feeding Denys Basin were sampled from land. These sampling sites are listed in Table 1.

The water samplers were subsampled for salinity, dissolved oxygen, sulfide, nutrients (silicate, phosphate, nitrate, nitrite, and ammonia), chlorophyll a, phaeophytin. Trace metal samples were collected on 95908 and 97052. Not all analytes were measured throughout the program, or on all samples; numbers of measurements available for each analyte are given in Table 2.

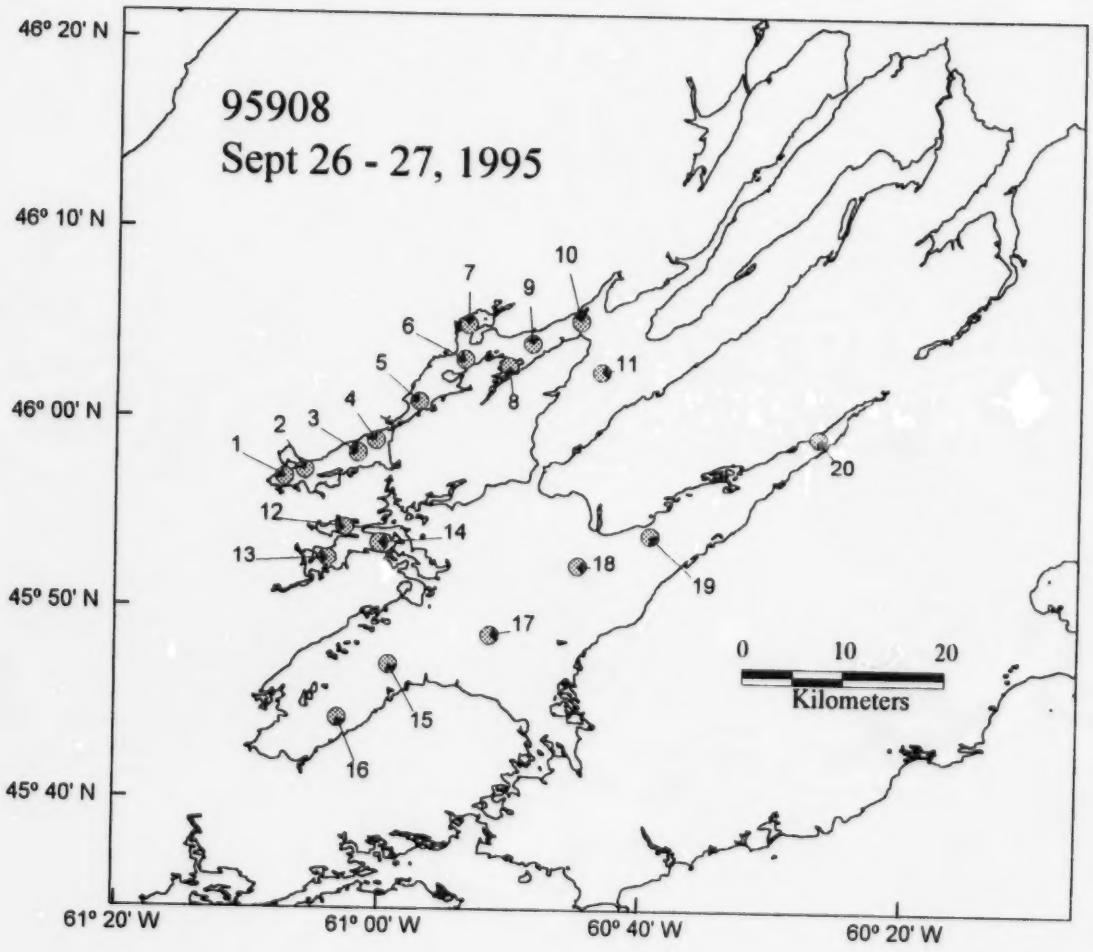

Figure 2. Station locations for survey 95908.

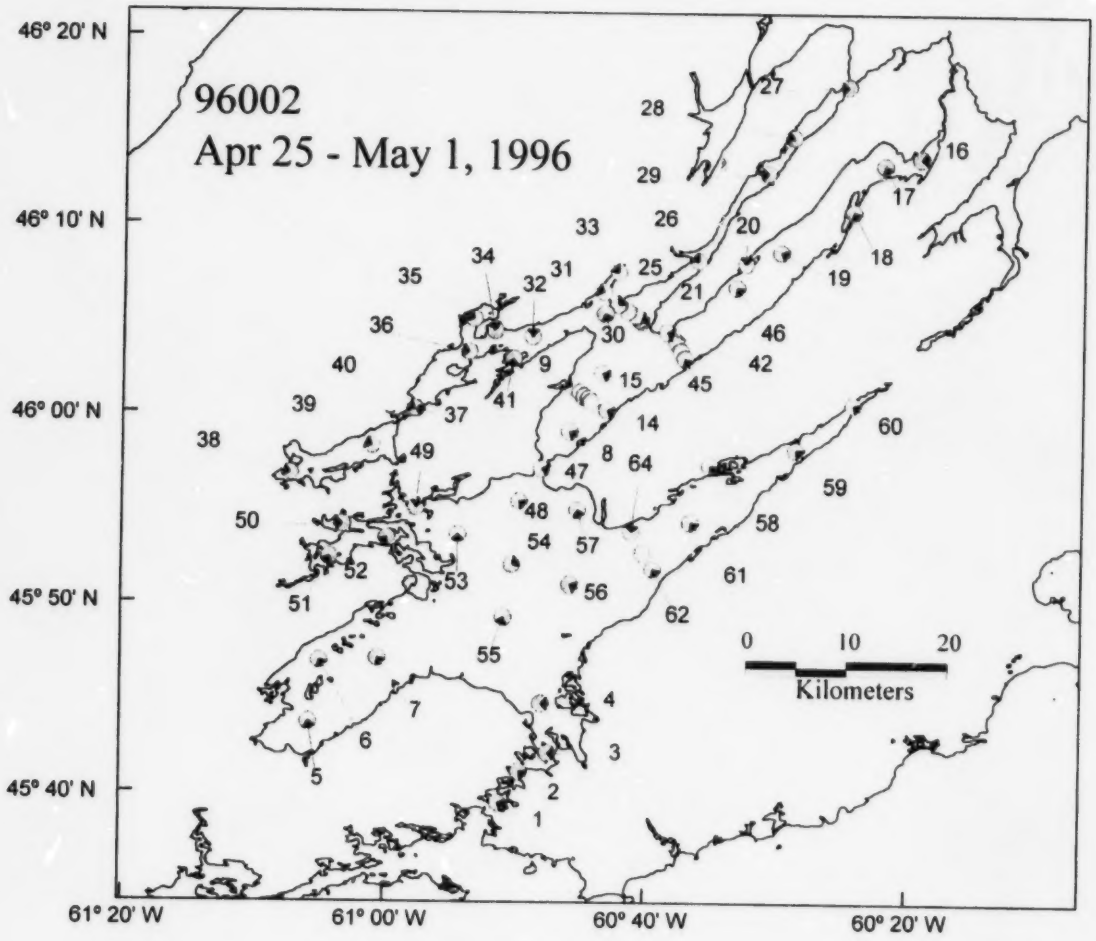

Figure 3. Survey locations for survey 96002.

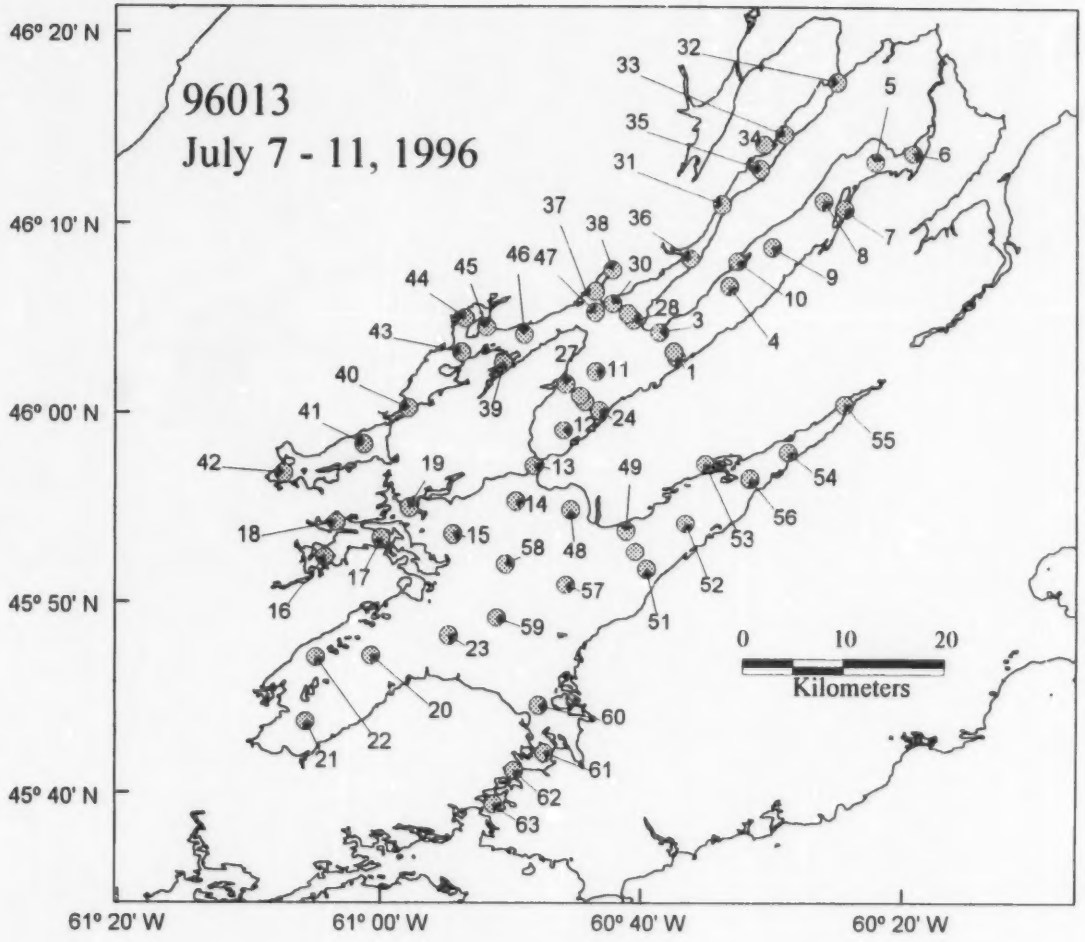

Figure 4. Station locations for survey 96013.

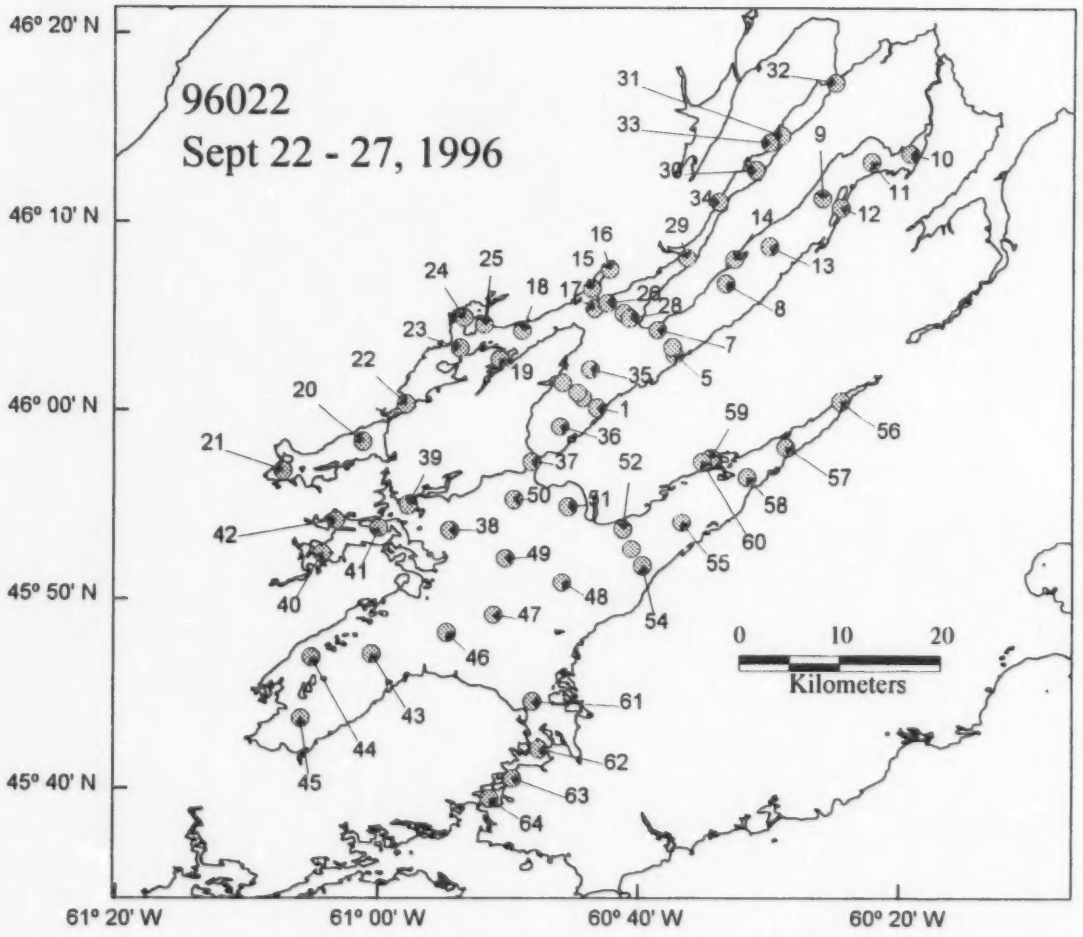

Figure 5. Station locations for survey 96022.

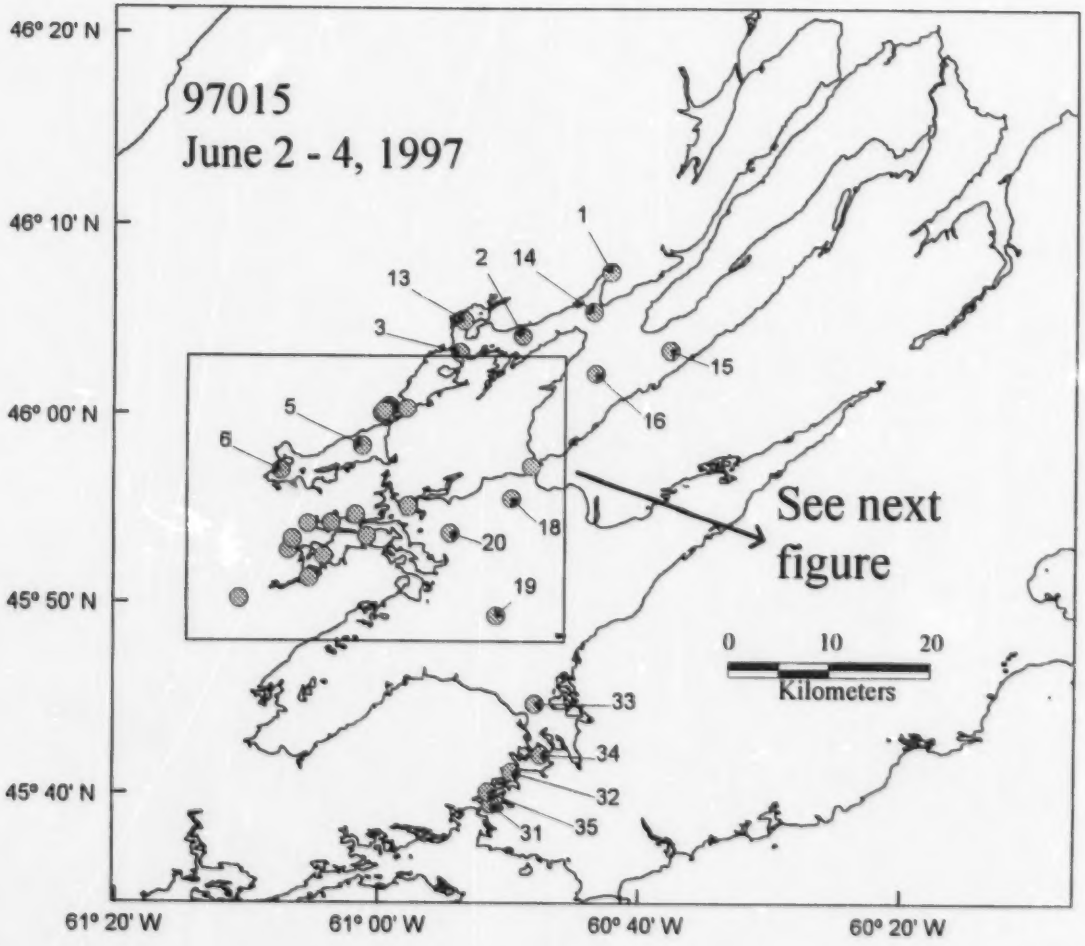

Figure 6. Station locations for survey 97015.

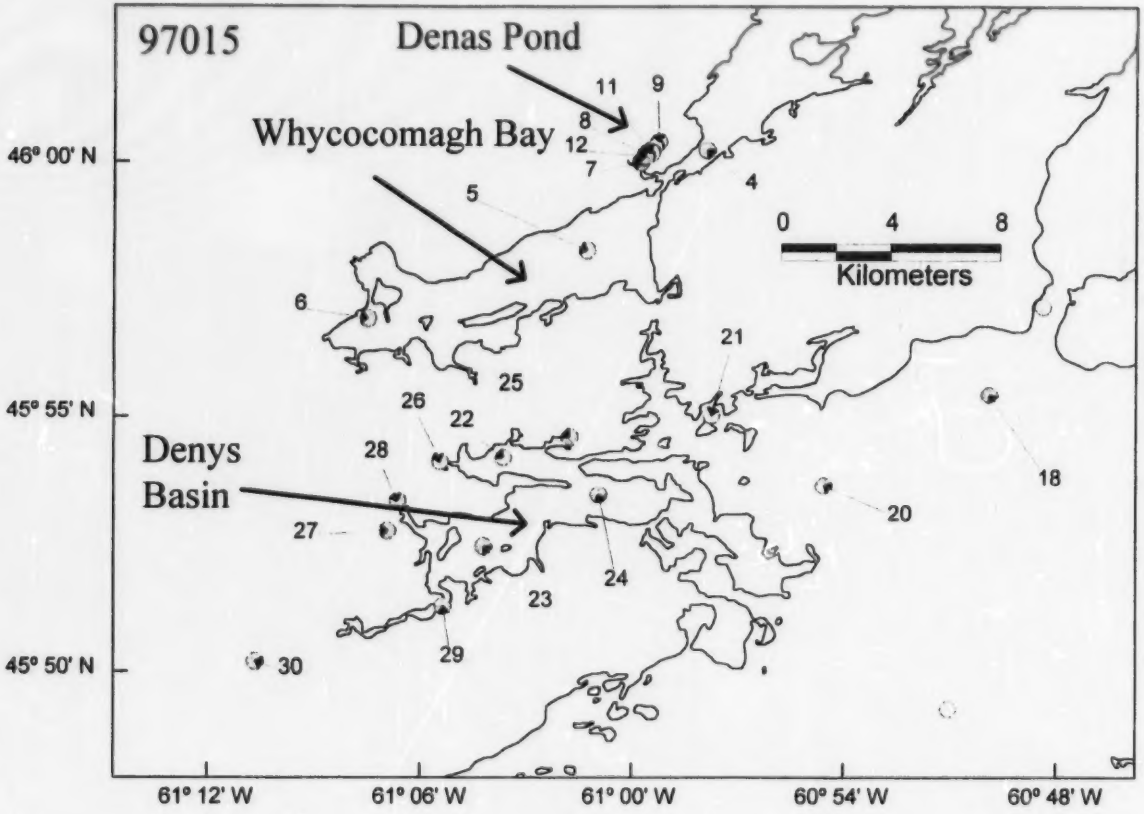

Figure 7. Whycocomagh Bay, Denys Basin and Denas Pond station locations for survey 97015.

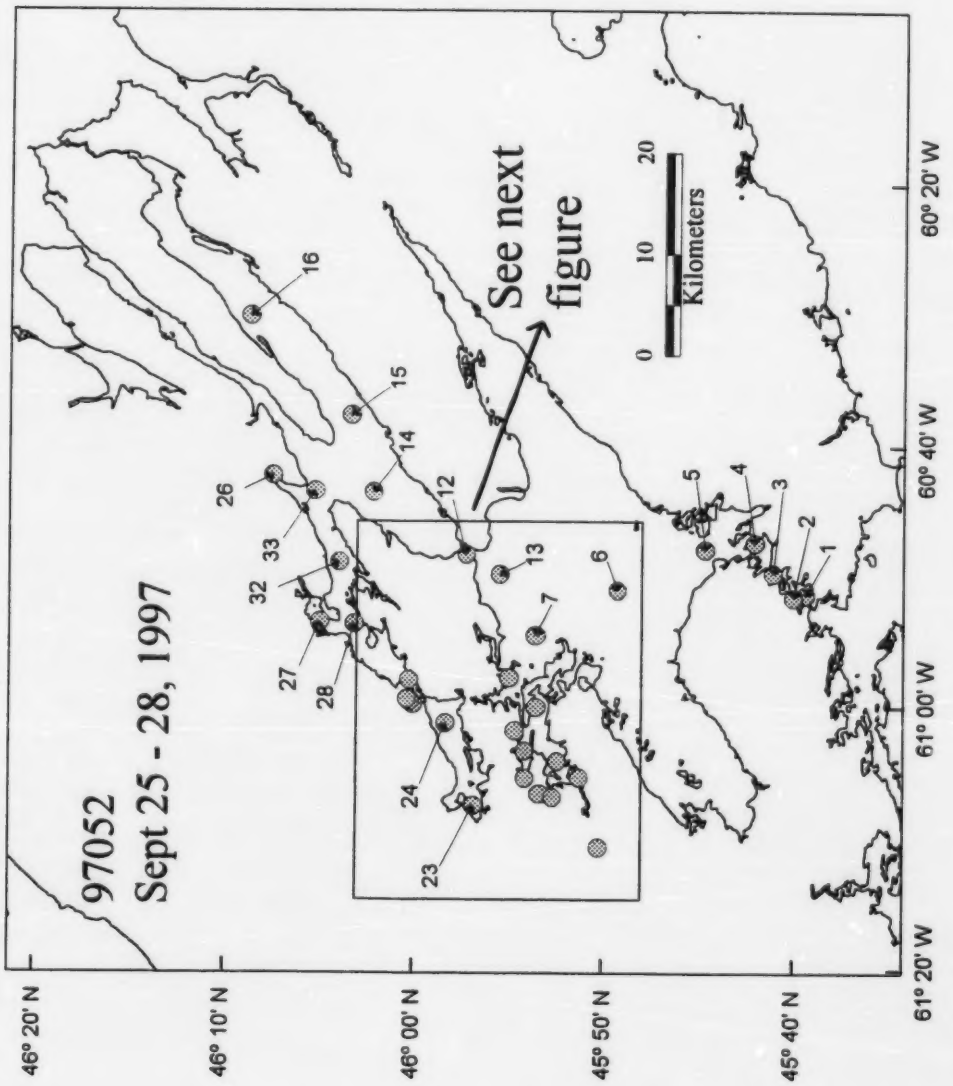

Figure 8. Station locations for survey 97052.

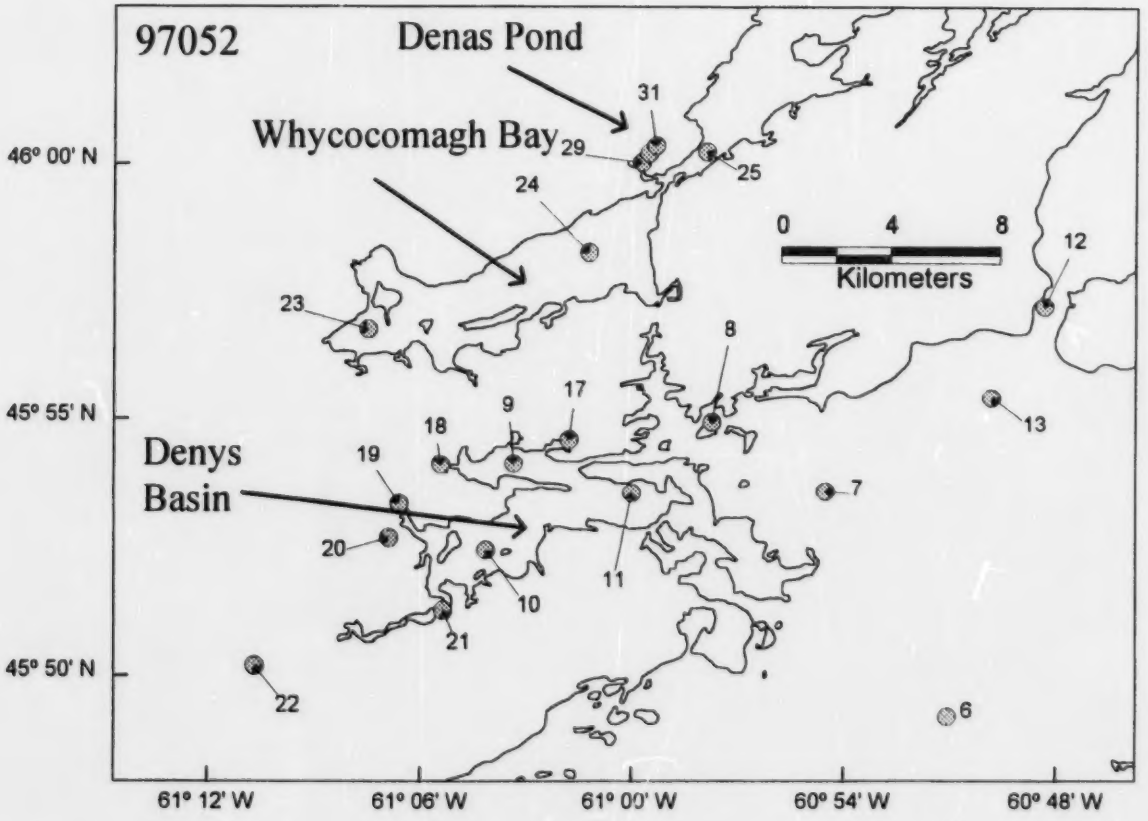

Figure 9. Whycocomagh Bay, Denys Basin and Denas Pond station locations for survey 97052.

Table 1. Station numbers for streams feeding Denys Basin.

Stream	97015	97052
Stream at head of Morrison Cove	25	17
Blues Cove, near Orangedale RR bridge	26	18
MacLeans Brook	27	20
Little Blues Brook, at Seal Cove	28	19
River Denys, near mouth	29	21
River Denys, upstream near town of River Denys	30	22

Table 2. Numbers of samples collected for each variable.

	95908	96002	96013	96022	97015	97052
Temperature	54	169	183	184	19	44
Salinity	56	169	183	185	43	51
Dissolved oxygen	43	168	182	184	37	45
Sulfide		2	7	5	6	9
Silicate	56	169	183	186	43	51
Phosphate	56	169	183	186	43	51
Nitrite	56	96	183	186	40	50
Nitrate + Nitrite	56	169	183	186	43	51
Ammonia	56	169	182	186	42	51
Chlorophyll *a*		128	79	153		
Phaeophytin		128	79	153		
Cadmium, filtered	13					7
Copper, filtered	13					7
Iron, filtered	13					7
Lead, filtered	13					7
Manganese, filtered	13					7
Mercury, reactive	12					
Nickel, filtered	13					7
Zinc, filtered	13					7
Suspended Particulate Matter	13					

In addition to the discrete water samples, profiles of salinity, temperature, chlorophyll fluorescence, dissolved oxygen and photosynthetically active radiation (PAR) were obtained using a Seabird Electronics SBE-25 CTD. The CTD temperatures that correspond to the depths of the discrete samples are reported here; their precision and accuracy are better than 0.01 °C.

Exponential PAR attenuation coefficients are given in Appendix A for stations which had linear $\log_e$ (PAR) - depth relationships at depths greater than 5 m. PAR data from less than 5 m were not used in these calculations because of uncertainty over artifacts from the hull of the sampling vessel and other surface noise. More complete CTD data may be obtained from the Bedford Institute of Oceanography Data Archive.

Finally, Secchi depths were observed at some stations using a 25 cm diameter black and white Secchi disk. These data are also reported in Appendix A.

SALINITY

Salinities of discrete samples were measured with a Guildline AutoSal® model 8400 salinometer, standardized with IAPSO standard seawater from Ocean Scientific International. Precision and accuracy of these measurements are better than 0.01.

DISSOLVED OXYGEN

Dissolved oxygen concentrations were measured by Winkler titrations, using equipment and techniques described in Levy et al. (1977). Samples were collected as soon as possible after retrieval of the sampler. Precision and accuracy of these measurements are better than 1 %.

SULFIDE

Total soluble sulfide (H_2S, HS^- and $S^=$) was determined on samples that were known or expected to have low dissolved oxygen levels using an Orion Model 9416BN sulfide-specific electrode in combination with a pH/reference electrode (Fisher 13-620-111). The combination electrode was used with an Accumet 1003 (Fisher Brand) mV meter and was calibrated against freshly made standards of $Na_2S \bullet 9H_2O$ at concentrations of 10, 100, and 1000 μM. Samples for sulfide analysis were collected in the same manner as dissolved oxygen samples to minimize exchange with the atmosphere and were analyzed less than 30 minutes after sample collection.

NUTRIENTS

All nutrient analyses were performed using colorimetric techniques on a Technicon AutoAnalyzer II (AA II) segmented flow analyzer. Analytes included reactive silicate, phosphate, nitrate + nitrite (subsequently referred to as nitrate), nitrite, and ammonia.

These techniques have been described in detail in Strain and Clement (1996). Detection limits and analytical precisions are determined for each nutrient for each run. Median values for the data in this report are given in Table 3. Detection limits are equal to three times the standard deviation of the blanks; the precision estimates are equal to the standard deviation of the check standards (a pair of check standards are analyzed after every group of 16 samples). Since most samples were analyzed in duplicate, the precision of the results will be the precision listed in the table divided by $\sqrt{2}$.

Table 3. Median performance indicators of nutrient analyses presented in this report.

Nutrient	Precision (%)	Detection Limit (μM)
Silicate	1.37	0.19
Phosphate	3.32	0.038
Nitrate + Nitrite	1.10	0.14
Nitrite	1.25	0.027
Ammonia	2.33	0.47

CHLOROPHYLL AND PHAEOPHYTIN

One liter samples were collected for pigment analysis and filtered through 47 mm Whatman glass-fibre filters (GFF) under reduced pressure. Filters were stored frozen until they were analyzed by standard techniques (Parsons et al, 1984).

TRACE METALS AND SUSPENDED PARTICULATE MATTER

Trace metal samples were collected using a Lever Action 5-liter sampler that had been precleaned with weak acid and high purity water in the BIO clean lab. During the 95908 expedition, unfiltered 2-liter samples were collected at each station and filtered later the same day through acid cleaned and tared Nuclepore® 0.45 μm polycarbonate filters. Suspended particulate matter was determined by weighing filters after they were washed of residual salt and air dried in a clean bench. Unfiltered water samples for reactive mercury were also collected from each site. The mercury samples were acidified later the same day in a portable clean bench with 3 ml of high purity HNO_3.

During the 97052 expedition, 1-liter filtered samples were processed directly from the Lever Action bottle. The water was drawn from the sampler through a prewashed, 0.45 μm mini-capsule filter (Gelman Sciences) with a hand operated Masterflex® peristaltic pump. The filtered samples from both expeditions were acidified with 1 ml/liter high purity HNO_3 in the clean lab at BIO.

Dissolved iron, manganese, lead, nickel, copper, zinc and cadmium concentrations were determined by graphite furnace atomic absorption spectrometry with Zeeman correction following an extraction step (see Yeats and Bewers, 1985 for details on manganese; Danielsson et al., 1985 for details on other metals). Reactive mercury was determined using single-stage gold amalgamation preconcentration after $SnCl_2$ reduction and detection by cold vapour atomic fluorescence spectrometry (see Liang and Bloom, 1993 and Dalziel, 1995, for details).

RESULTS

Figures 10–13 show selected CTD temperature, salinity and dissolved oxygen profiles from the three major surveys in 1996. The stations at Great Bras d'Or were chosen to represent conditions at the entrance to the Lakes. Stations in St. Andrews Channel and St. Peters Basin were chosen to depict conditions within these bodies of water. The stations at Barra Strait were chosen to portray vertical structure in the connection between these two major basins. More complete CTD data may be obtained from the Bedford Institute of Oceanography Data Archive.

Appendix A lists the positions, times, water depths, PAR attenuation coefficients, and Secchi depths for the stations shown on Figures 2-9. The range column to the right of the PAR column gives the depth range used in the $\log_e$ (PAR) v depth fit.

Appendix B lists the stations, sample depths, salinities, temperatures, nutrients, dissolved O_2, O_2 saturation, sulfide, chlorophyll a and phaeophytin for all samples collected on the surveys.

Appendix C lists the trace metal and SPM data.

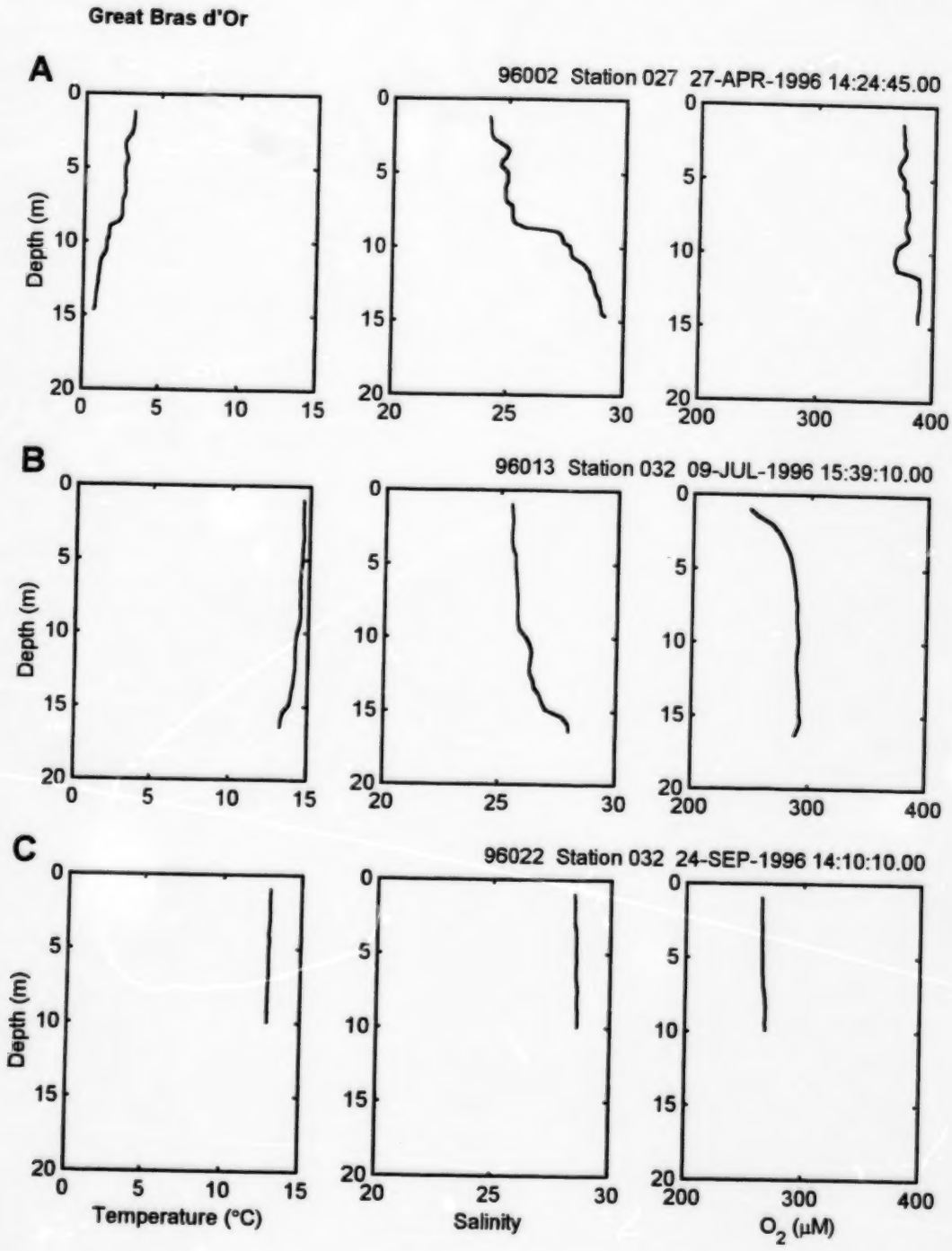

Figure 10. CTD profiles at Great Bras d'Or in the Spring (A), Summer (B) and Fall (C) of 1996.

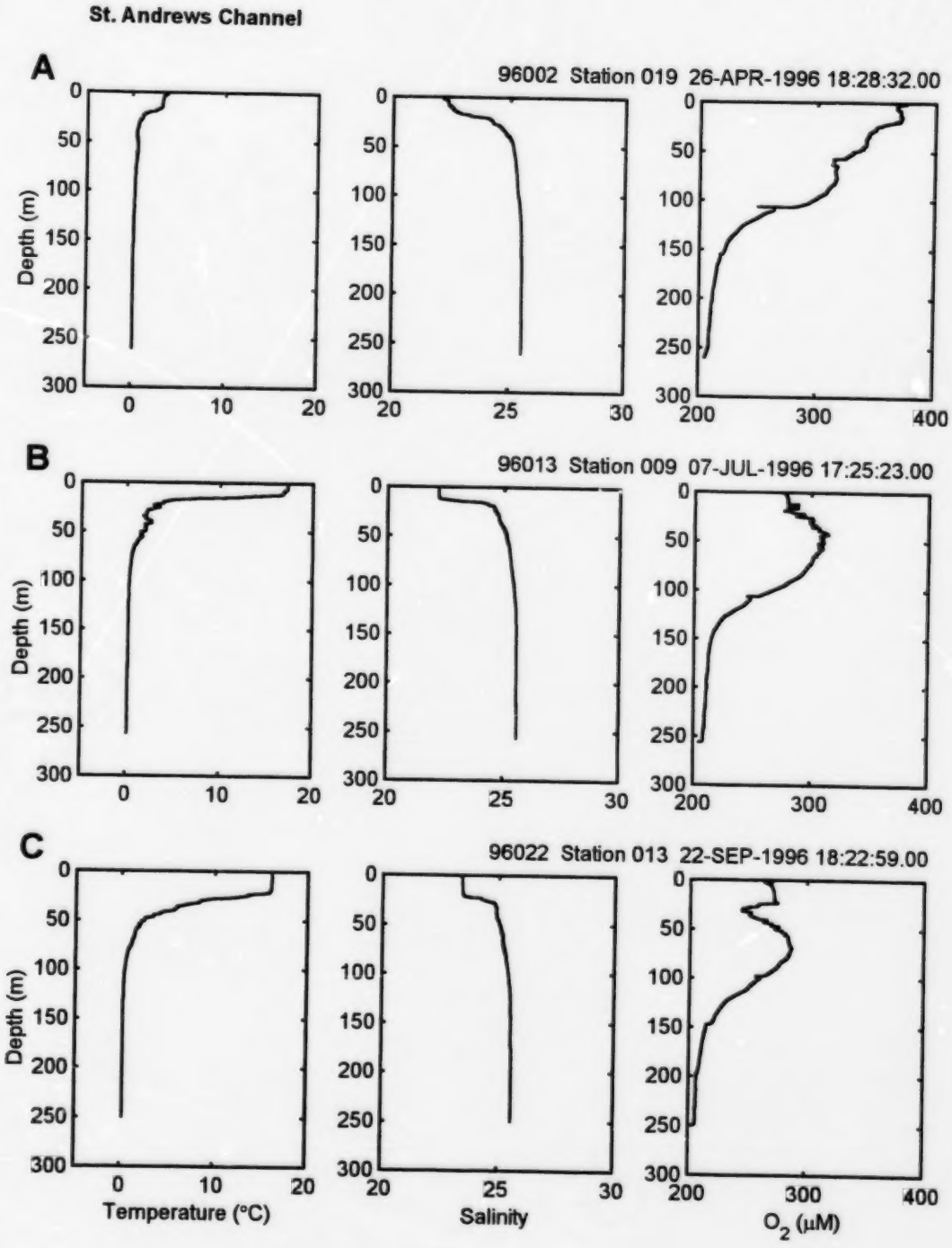

Figure 11. CTD profiles in St. Andrews Channel in the Spring (A), Summer (B) and Fall (C) of 1996.

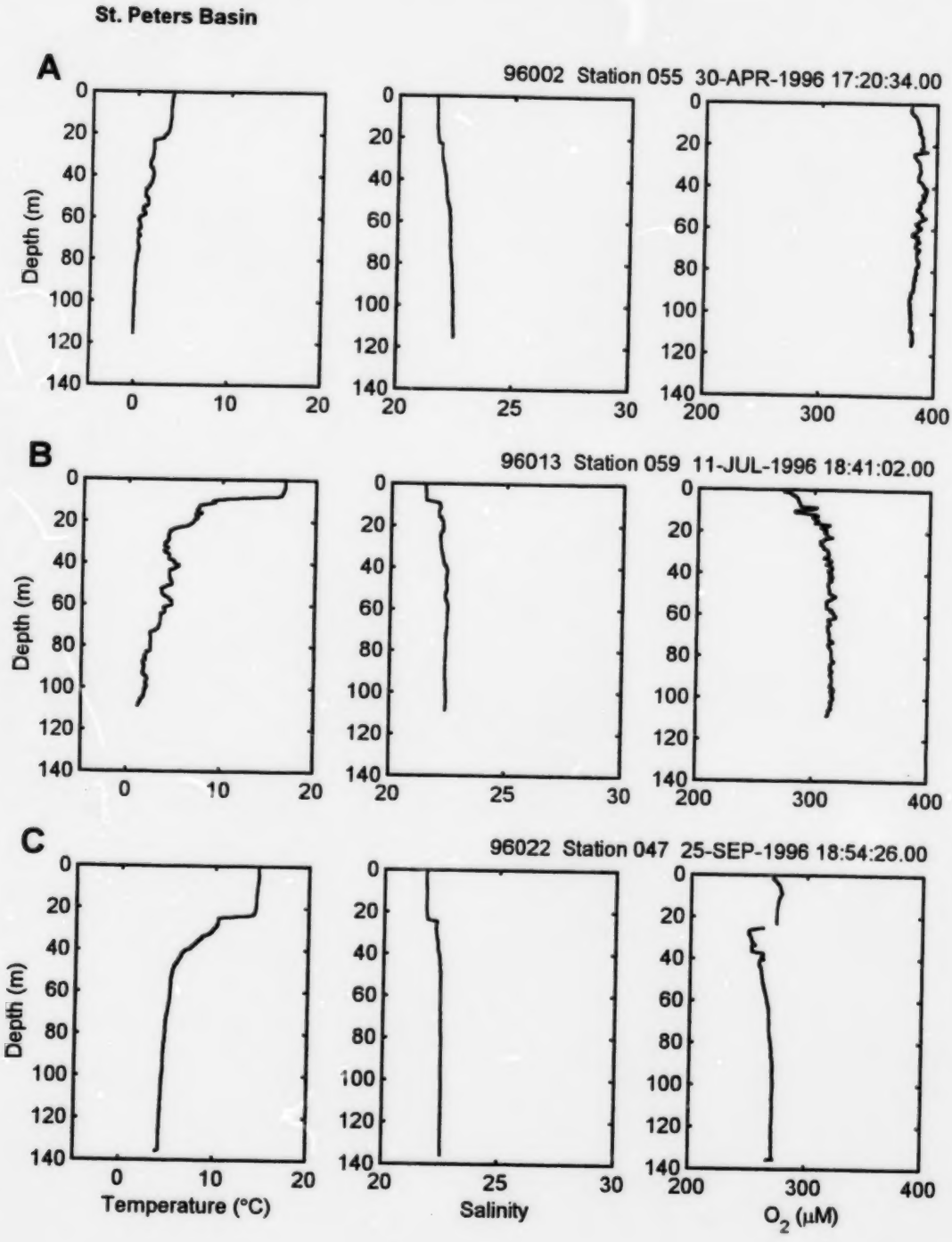

Figure 12. CTD profiles in St. Peters Basin in the Spring (A), Summer (B) and Fall (C) of 1996.

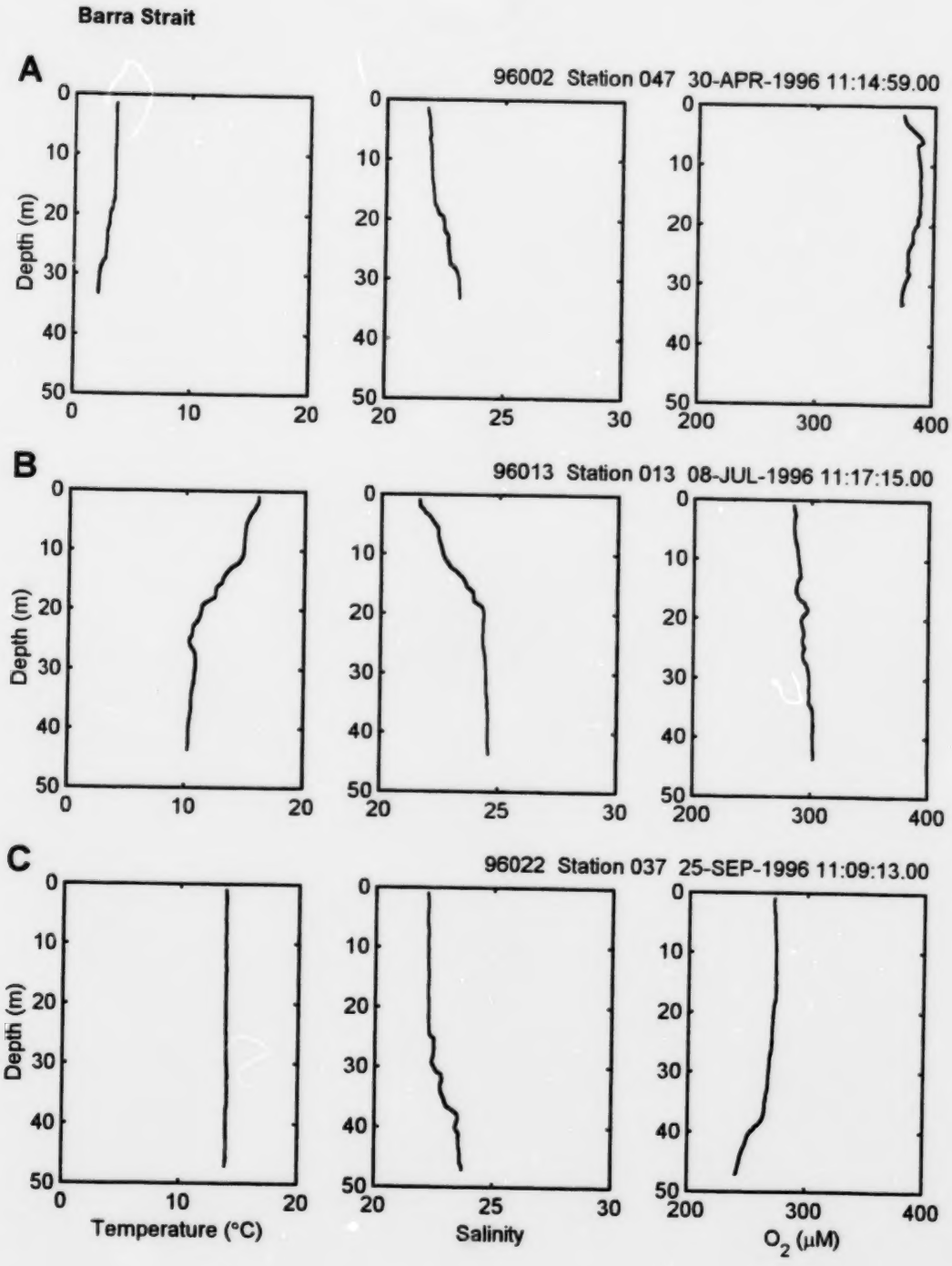

Figure 13. CTD profiles in Barra Strait in the Spring (A), Summer (B) and Fall (C) of 1996.

ACKNOWLEDGEMENTS

These surveys would not have been possible without the active participation of the Eskasoni Fish and Wildlife Commission, directed by Charlie Dennis. They were the catalyst for doing the work, and actively supported it throughout the program by assisting with logistics and providing staff to assist with the sampling work. Blair Bernard and Ray Prosper manned the Eskasoni patrol boat for the 95908 survey, and took part in the sampling on the Navicula surveys. Eugene Denny, Allison MacIsaac, Cheryl Berube, Heather Jones, Fabian Francis and Alister Marshall also helped with the Navicula program.

Jared Wolf and Jaideep Narayanan from the University College of Cape Breton also took part in the surveys. Capt. Joe Bray and the crew of the Navicula were always a pleasure to work with: their cheerful professionalism and eagerness to assist whenever possible made for an ideal working environment. Pierre Clement of the Marine Chemistry Section at BIO participated in the 95908 survey, and performed all of the nutrient analyses. John Dalziel, also in Marine Chemistry, took part in the 95908 survey and provided the trace metal data.

REFERENCES

Arseneau, D.F., A.J. Arseneau and C. Rogers. 1977. The waters of East Bay, Cape Breton Island. Bras d'Or Institute of the College of Cape Breton. Technical Bulletin No. 2, 78p.

Dalziel, J.A. 1995. Reactive mercury in the eastern North Atlantic and southeast Atlantic. *Marine Chemistry*, 49: 307-314.

Danielsson, L.G., Magnusson, B. and Westerlund, S. 1985. Cadmium, copper, iron, nickel and zinc in the northeast Atlantic Ocean. *Marine Chemistry*, 17: 23-41.

Geen, G.H. 1965. Primary Production in Bras d'Or Lakes and other inland waters of Cape Breton Island, Nova Scotia. Ph.D. thesis, Dalhousie University, Halifax, N.S. 187 p.

Geen, G.H. and B.T. Hargrave. 1966. Primary and secondary production in Bras d'Or Lake, Nova Scotia, Canada. *Int. Ver. Theor. Angew. Limnol. Verh.* 16: 333-340.

Gurbutt, P.A. and B. Petrie. 1995. Circulation in the Bras d'Or Lakes. *Est. Coast. Shelf Sci.* 41: 611-630.

Krauel, D.P. 1975. The physical oceanography of the Bras d'Or Lakes 1972-1974. *Bedford Institute of Oceanography, Fisheries and Marine Science Service Technical Report* 570: 357 p.

Levy, E.M., C.C. Cunningham, C.D.W. Conrad, and J.D. Moffatt. 1977. The determination of dissolved oxygen in seawater. *Bedford Institute of Oceanography Report Series* BI-R-77-9, ii + 17 pp. Dartmouth, Nova Scotia, Canada.

Liang, L. and N.S. Bloom. 1993. Determination of total mercury by single-stage gold amalgamation with cold vapour atomic spectrometric detection. *Journal of Analytical Atomic Spectrometry*, 8: 591-594.

Parsons, T.R., Y. Maita and C.M Lalli. 1984. A manual of chemical and biological methods for seawater analysis. Pergamon Press, Oxford.

Smith, M.W. and D.K. Rushton. 1964. A study of the barachois ponds in the Bras d'Or Lake area of Cape Breton, Nova Scotia. *Proc. Nova Scotian Institute Sci.* 26: 3-17.

Strain, P.M. 2001. The Chemistry of the Bras d'Or Lakes. Proceedings of the Nova Scotian Institute of Science. In preparation.

Strain, P.M. and P.M. Clement. 1996. Nutrient and dissolved oxygen concentrations in the Letang Inlet, New Brunswick, in the summer of 1994. *Can. Data Rep. Fish. Aquat. Sci.* 1004: iv + 33 p.

Vilks, G. 1967. Quantitative analysis of Foraminifera in Bras D'or Lakes. Bedford Institute of Oceanography Report Series 67-1. v + 84 p.

Yeats, P.A. and Bewers, J.M. 1985. Manganese in the western North Atlantic Ocean. Marine Chemistry 17: 255-263.

Appendix A. Station locations for Bras d'Or Lakes Surveys 95908, 96002, 96013, 96022, 97015 and 97052.

Survey	Stn	Latitude (N)	Longitude (W)	Date	Time (UT)	Depth (m)	PAR k (m^{-1})	Range (m)	Secchi z (m)
95908	1	45° 56.81'	61° 07.45'	Sep 26, 1995	11:27	46	0.399	5-10.7	
95908	2	45° 57.18'	61° 05.90'	Sep 26, 1995	12:18	8	0.345	5-6.5	
95908	3	45° 58.15'	61° 01.87'	Sep 26, 1995	12:56	34	0.279	5-20.1	
95908	4	45° 58.77'	61° 00.48'	Sep 26, 1995	13:48	15	0.328	5-13.1	
95908	5	46° 00.88'	60° 57.23'	Sep 26, 1995	14:20	11	0.333	5-10	
95908	6	46° 03.14'	60° 53.74'	Sep 26, 1995	15:03	11	0.294	5-10.8	
95908	7	46° 04.96'	60° 53.52'	Sep 26, 1995	15:56	12	0.330	5-10.8	
95908	8	46° 02.79'	60° 50.39'	Sep 26, 1995	16:46	11	0.278	5-9.5	
95908	9	46° 03.97'	60° 48.61'	Sep 26, 1995	17:37	11	0.263	5-9.8	
95908	10	46° 05.17'	60° 44.94'	Sep 26, 1995	18:16	23	0.234	5-21.6	
95908	11	46° 02.51'	60° 43.30'	Sep 26, 1995	18:54	106	0.197	5-39.1	
95908	12	45° 54.19'	61° 02.81'	Sep 26, 1995	21:34	8	0.354	5-7	
95908	13	45° 52.57'	61° 04.11'	Sep 27, 1995	11:45	7			
95908	14	45° 53.38'	61° 00.19'	Sep 27, 1995	12:35	6			
95908	15	45° 47.00'	60° 59.35'	Sep 27, 1995	14:23	34	0.198	5-32	
95908	16	45° 44.20'	61° 03.21'	Sep 27, 1995	14:57	50	0.191	5-53.7	
95908	17	45° 48.57'	60° 51.65'	Sep 27, 1995	15:50	129	0.179	5-35	
95908	18	45° 52.23'	60° 44.97'	Sep 27, 1995	16:53	40	0.188	5-32.6	
95908	19	45° 53.85'	60° 39.44'	Sep 27, 1995	17:21	25	0.203	5-23.7	
95908	20	45° 59.11'	60° 26.68'	Sep 27, 1995	18:14	53	0.237	5-41	
96002	1	45° 39.46'	60° 51.21'	Apr 25, 1996	11:32	27			
96002	2	45° 41.10'	60° 49.63'	Apr 25, 1996	12:20	20	0.265	5-18.6	
96002	3	45° 42.08'	60° 47.44'	Apr 25, 1996	12:50	23	0.266	5-11.2	
96002	4	45° 44.64'	60° 48.00'	Apr 25, 1996	13:30	41	0.217	5-38.2	
96002	5	45° 43.67'	61° 05.81'	Apr 25, 1996	15:40	37	0.174	5-33.7	
96002	6	45° 46.87'	61° 05.01'	Apr 25, 1996	16:32	44			
96002	7	45° 47.01'	61° 00.58'	Apr 25, 1996	17:09	62	0.192	5-35.6	
96002	8	45° 59.01'	60° 46.03'	Apr 25, 1996	19:11	45	0.165	5-38	
96002	9	46° 01.41'	60° 45.90'	Apr 26, 1996	11:44	25	0.179	5-23.6	
96002	10	46° 01.08'	60° 45.25'	Apr 26, 1996	12:01	38	0.177	5-34.5	
96002	11	46° 00.87'	60° 44.92'	Apr 26, 1996	12:22	149	0.172	5-37.6	

Survey	Stn	Latitude (N)	Longitude (W)	Date	Time (UT)	Depth (m)	PAR k (m^{-1})	Range (m)	Secchi z (m)
96002	12	46° 00.75'	60° 44.59'	Apr 26, 1996	12:50	60	0.171	5-40	
96002	13	46° 00.58'	60° 44.42'	Apr 26, 1996	13:04	28	0.180	5-24.8	
96002	14	46° 00.17'	60° 43.20'	Apr 26, 1996	13:17	19	0.195	5-14.4	
96002	15	46° 02.12'	60° 43.57'	Apr 26, 1996	14:09	196	0.172	5-46.4	
96002	16	46° 13.55'	60° 19.35'	Apr 26, 1996	16:41	13			
96002	17	46° 13.18'	60° 22.09'	Apr 26, 1996	17:09	24			
96002	18	46° 10.75'	60° 24.47'	Apr 26, 1996	17:35	37			
96002	19	46° 08.56'	60° 29.97'	Apr 26, 1996	18:25	267	0.163	5-52	
96002	20	46° 07.95'	60° 32.68'	Apr 26, 1996	19:30	11			
96002	21	46° 04.88'	60° 40.65'	Apr 27, 1996	11:27	17	0.186	5-14.5	
96002	22	46° 04.98'	60° 40.75'	Apr 27, 1996	11:45	25	0.170	5-21.7	
96002	23	46° 05.17'	60° 41.05'	Apr 27, 1996	11:49	99	0.169	5-42.5	
96002	24	46° 05.42'	60° 41.70'	Apr 27, 1996	12:13	24	0.180	5-22.4	
96002	25	46° 05.76'	60° 42.45'	Apr 27, 1996	12:24	19	0.158	5-14.7	
96002	26	46° 08.09'	60° 36.27'	Apr 27, 1996	13:05	39	0.173	5-30	
96002	27	46° 17.44'	60° 24.96'	Apr 27, 1996	14:24	23	0.172	5-14.6	
96002	28	46° 14.64'	60° 29.12'	Apr 27, 1996	15:31	28	0.161	5-19.7	
96002	29	46° 12.75'	60° 31.03'	Apr 27, 1996	15:55	101	0.166	5-50.9	
96002	30	46° 05.29'	60° 43.42'	Apr 27, 1996	17:24	23	0.181	5-19.9	
96002	31	46° 06.41'	60° 43.54'	Apr 27, 1996	17:42	16	0.187	5-13.6	
96002	32	46° 04.05'	60° 48.96'	Apr 27, 1996	18:20	16	0.175	5-13.9	
96002	33	46° 07.47'	60° 42.42'	Apr 28, 1996	12:21	24	0.250	5-20.3	
96002	34	46° 04.37'	60° 51.84'	Apr 28, 1996	13:50	13	0.181	5-10.9	
96002	35	46° 04.96'	60° 53.43'	Apr 28, 1996	14:20	11	0.218	5-9.1	
96002	36	46° 03.22'	60° 53.78'	Apr 28, 1996	14:47	12			
96002	37	46° 00.19'	60° 57.86'	Apr 28, 1996	15:28	12			
96002	38	45° 56.76'	61° 07.41'	Apr 28, 1996	16:37	47	0.312	5-28.5	
96002	39	45° 58.23'	61° 01.17'	Apr 28, 1996	17:23	39	0.193	5-31.6	
96002	40	46° 00.19'	60° 57.93'	Apr 28, 1996	17:55	11			
96002	41	46° 02.87'	60° 50.40'	Apr 29, 1996	12:01	13	0.254	5-9.5	
96002	42	46° 04.32'	60° 38.65'	Apr 29, 1996	13:42	51	0.186	5-37.7	
96002	43	46° 03.79'	60° 37.91'	Apr 29, 1996	14:00	32	0.204	5-24.3	
96002	44	46° 03.30'	60° 37.56'	Apr 29, 1996	14:11	156	0.184	5-40.3	
96002	45	46° 02.90'	60° 37.23'	Apr 29, 1996	15:11	23			

Survey	Stn	Latitude (N)	Longitude (W)	Date	Time (UT)	Depth (m)	PAR k (m^{-1})	Range (m)	Secchi z (m)
96002	46	46° 06.68'	60° 33.36'	Apr 29, 1996	15:44	234	0.154	5-59.6	
96002	47	45° 57.05'	60° 48.17'	Apr 30, 1996	11:13	37			
96002	48	45° 55.35'	60° 49.85'	Apr 30, 1996	11:37	71	0.197	5-41.6	
96002	49	45° 54.98'	60° 57.75'	Apr 30, 1996	12:21	16	0.250	5-13.3	
96002	50	45° 54.07'	61° 03.37'	Apr 30, 1996	13:15	10	0.278	5-7.9	
96002	51	45° 52.36'	61° 04.34'	Apr 30, 1996	13:57	6			
96002	52	45° 53.37'	60° 59.95'	Apr 30, 1996	14:40	5			
96002	53	45° 53.57'	60° 54.51'	Apr 30, 1996	15:55	20	0.205	5-17.9	
96002	54	45° 51.99'	60° 50.35'	Apr 30, 1996	16:24	55	0.175	5-50.2	
96002	55	45° 49.21'	60° 50.97'	Apr 30, 1996	17:20	135	0.176	5-46.3	
96002	56	45° 50.95'	60° 45.89'	Apr 30, 1996	18:05	79	0.186	5-48.9	
96002	57	45° 54.87'	60° 45.38'	May 01, 1996	11:36	86	0.175	5-40.3	
96002	58	45° 57.28'	60° 35.23'	May 01, 1996	13:38	6			
96002	59	45° 58.11'	60° 28.64'	May 01, 1996	14:31	74	0.191	5-39	
96002	60	46° 00.52'	60° 24.31'	May 01, 1996	15:25	12	0.213	5-9.6	
96002	61	45° 54.24'	60° 36.67'	May 01, 1996	16:39	25	0.178	5-23.7	
96002	62	45° 51.78'	60° 39.51'	May 01, 1996	17:05	25	0.164	5-22.7	
96002	63	45° 52.60'	60° 40.30'	May 01, 1996	17:16	45	0.180	5-40.3	
96002	64	45° 53.74'	60° 41.21'	May 01, 1996	17:33	20	0.158	5-16.8	
96013	1	46° 02.86'	60° 37.34'	Jul 07, 1996	12:13	24	0.173	5-19.9	
96013	2	46° 03.22'	60° 37.56'	Jul 07, 1996	12:26	154	0.172	5-40.3	> 7
96013	3	46° 04.24'	60° 38.68'	Jul 07, 1996	12:57	61	0.172	5-53.7	> 7
96013	4	46° 06.65'	60° 33.30'	Jul 07, 1996	13:42	235	0.159	5-41.7	> 7
96013	5	46° 13.18'	60° 22.18'	Jul 07, 1996	15:08	25			> 7
96013	6	46° 13.65'	60° 19.30'	Jul 07, 1996	15:30	16			> 7
96013	7	46° 10.71'	60° 24.53'	Jul 07, 1996	16:10	32			> 7
96013	8	46° 11.11'	60° 26.09'	Jul 07, 1996	16:39	196			
96013	9	46° 08.68'	60° 30.03'	Jul 07, 1996	17:23	267	0.169	5-37.3	> 7
96013	9	46° 08.68'	60° 30.03'	Jul 07, 1996	17:23	271	0.169	5-37.3	> 7
96013	10	46° 07.96'	60° 32.72'	Jul 07, 1996	18:13	12	0.208	5-10.1	
96013	11	46° 02.16'	60° 43.55'	Jul 07, 1996	19:31	195	0.207	5-40	> 7
96013	12	45° 59.07'	60° 46.02'	Jul 07, 1996	20:12	49	0.221	5-27.2	
96013	13	45° 57.15'	60° 48.27'	Jul 08, 1996	11:18	50	0.207	5-44.4	> 7

Survey	Stn	Latitude (N)	Longitude (W)	Date	Time (UT)	Depth (m)	PAR k (m^{-1})	Range (m)	Secchi z (m)
96013	14	45° 55.30'	60° 49.66'	Jul 08, 1996	11:42	66			> 7
96013	15	45° 53.60'	60° 54.49'	Jul 08, 1996	12:18	20			
96013	16	45° 52.40'	61° 04.26'	Jul 08, 1996	13:43	6			
96013	17	45° 53.37'	60° 59.95'	Jul 08, 1996	14:10	5			
96013	18	45° 54.19'	61° 03.35'	Jul 08, 1996	15:16	10	0.290	5-8.9	5.0
96013	19	45° 54.96'	60° 57.79'	Jul 08, 1996	15:59	16	0.181	5-13.5	7.0
96013	20	45° 47.14'	61° 00.69'	Jul 08, 1996	17:17	69	0.155	5-39.1	> 7
96013	21	45° 43.72'	61° 05.73'	Jul 08, 1996	17:59	38	0.176	5-34.4	> 7
96013	22	45° 47.06'	61° 04.90'	Jul 08, 1996	18:33	28			
96013	23	45° 48.22'	60° 54.77'	Jul 08, 1996	19:26	50	0.174	5-44	> 7
96013	24	46° 00.12'	60° 43.28'	Jul 09, 1996	11:33	20	0.192	5-17.6	
96013	25	46° 00.56'	60° 44.38'	Jul 09, 1996	11:44	28	0.193	5-25	
96013	26	46° 00.92'	60° 44.74'	Jul 09, 1996	11:54	173	0.181	5-40	> 7
96013	27	46° 01.51'	60° 45.84'	Jul 09, 1996	12:29	24	0.178	5-20.6	
96013	28	46° 04.88'	60° 40.67'	Jul 09, 1996	13:03	19	0.161	5-16.7	9.0
96013	29	46° 05.20'	60° 41.12'	Jul 09, 1996	13:19	92	0.184	5-33.8	8.0
96013	30	46° 05.74'	60° 42.27'	Jul 09, 1996	13:40	19	0.175	5-16.9	8.0
96013	31	46° 10.95'	60° 33.88'	Jul 09, 1996	14:32	78	0.187	5-30.2	8.0
96013	32	46° 17.38'	60° 25.08'	Jul 09, 1996	15:39	27	0.199	5-16.6	5.0
96013	33	46° 14.62'	60° 29.10'	Jul 09, 1996	16:15	30	0.188	5-23.4	
96013	34	46° 14.10'	60° 30.68'	Jul 09, 1996	17:05	20	0.184	5-18.1	
96013	35	46° 12.78'	60° 30.98'	Jul 09, 1996	18:07	96	0.157	5-39.3	
96013	36	46° 08.08'	60° 36.31'	Jul 09, 1996	19:01	46	0.184	5-30.6	
96013	37	46° 06.38'	60° 43.57'	Jul 10, 1996	11:15	17	0.205	5-14	2.0
96013	38	46° 07.48'	60° 42.27'	Jul 10, 1996	11:58	30	0.297	5-19.9	
96013	39	46° 02.63'	60° 50.61'	Jul 10, 1996	13:26	11	0.208	5-9.1	
96013	40	46° 00.22'	60° 57.90'	Jul 10, 1996	14:31	13	0.198	5-9	4.0
96013	41	45° 58.28'	61° 01.31'	Jul 10, 1996	15:22	34	0.266	5-20.7	4.5
96013	42	45° 56.74'	61° 07.39'	Jul 10, 1996	16:00	48	0.381	5-15.7	4.5
96013	43	46° 03.18'	60° 53.80'	Jul 10, 1996	17:41	12	0.195	5-10.5	4.0
96013	44	46° 04.96'	60° 53.52'	Jul 10, 1996	17:59	12	0.222	5-11.6	0.5
96013	45	46° 04.50'	60° 51.91'	Jul 10, 1996	18:24	14	0.193	5-11.9	6.5
96013	46	46° 04.11'	60° 49.04'	Jul 10, 1996	18:45	16	0.212	5-13.1	5.0
96013	47	46° 05.27'	60° 43.60'	Jul 10, 1996	19:15	25	0.196	5-22.3	5.0

Survey	Stn	Latitude (N)	Longitude (W)	Date	Time (UT)	Depth (m)	PAR k (m^{-1})	Range (m)	Secchi z (m)
96013	48	45° 54.87'	60° 45.43'	Jul 11, 1996	11:32	87	0.171	5-40.5	8.0
96013	49	45° 53.78'	60° 41.20'	Jul 11, 1996	12:06	20			6.0
96013	50	45° 52.68'	60° 40.50'	Jul 11, 1996	12:20	41	0.169	5-39.6	9.0
96013	51	45° 51.76'	60° 39.59'	Jul 11, 1996	12:36	24			9.0
96013	52	45° 54.16'	60° 36.65'	Jul 11, 1996	13:00	30	0.195	5-24.6	9.0
96013	53	45° 57.28'	60° 35.13'	Jul 11, 1996	13:49	7			
96013	54	45° 57.88'	60° 28.81'	Jul 11, 1996	14:46	84	0.201	5-39.5	5.0
96013	55	46° 00.43'	60° 24.50'	Jul 11, 1996	15:27	12	0.233	5-10	5.0
96013	56	45° 56.50'	60° 31.74'	Jul 11, 1996	16:15	41	0.214	5-37.6	6.0
96013	57	45° 50.93'	60° 45.81'	Jul 11, 1996	17:34	83	0.161	5-43.5	10.0
96013	58	45° 52.00'	60° 50.45'	Jul 11, 1996	18:10	60	0.180	5-27.3	11.0
96013	59	45° 49.17'	60° 51.11'	Jul 11, 1996	18:40	152	0.172	5-39.6	9.0
96013	60	45° 44.57'	60° 47.88'	Jul 11, 1996	19:28	40	0.233	5-39.3	9.0
96013	61	45° 42.07'	60° 47.43'	Jul 11, 1996	19:55	25			5.0
96013	62	45° 41.14'	60° 49.74'	Jul 11, 1996	20:15	16			
96013	63	45° 39.41'	60° 51.33'	Jul 11, 1996	20:38	29	0.268	5-27.1	5.0
96022	1	46° 00.09'	60° 43.21'	Sep 22, 1996	11:32	21	0.260	5-19.5	
96022	2	46° 00.59'	60° 44.36'	Sep 22, 1996	11:47	28	0.298	5-14.8	3.5
96022	3	46° 00.89'	60° 44.74'	Sep 22, 1996	11:55	165	0.216	5-36.1	3.5
96022	4	46° 01.40'	60° 45.88'	Sep 22, 1996	12:35	32	0.190	5-34.8	4.5
96022	5	46° 02.91'	60° 37.24'	Sep 22, 1996	13:22	24	0.263	5-19.7	3.0
96022	6	46° 03.32'	60° 37.45'	Sep 22, 1996	13:32	155	0.245	5-26.5	4.5
96022	7	46° 04.23'	60° 38.59'	Sep 22, 1996	14:04	59			6.0
96022	8	46° 06.70'	60° 33.34'	Sep 22, 1996	14:40	234	0.214	5-40	4.5
96022	9	46° 11.20'	60° 25.95'	Sep 22, 1996	15:56	192	0.228	5-31.2	6.0
96022	10	46° 13.58'	60° 19.23'	Sep 22, 1996	16:52	10	0.352	5-7.6	
96022	11	46° 13.16'	60° 22.23'	Sep 22, 1996	17:12	25	0.271	5-19.7	5.0
96022	12	46° 10.71'	60° 24.54'	Sep 22, 1996	17:39	32	0.264	5-29.9	5.0
96022	13	46° 08.67'	60° 30.02'	Sep 22, 1996	18:20	266	0.256	5-28.6	6.0
96022	14	46° 08.00'	60° 32.70'	Sep 22, 1996	19:08	12	0.252	5-9.5	
96022	15	46° 06.40'	60° 43.61'	Sep 23, 1996	11:13	17	0.243	5-15.6	3.5
96022	16	46° 07.43'	60° 42.25'	Sep 23, 1996	11:55	30	0.256	5-23	
96022	17	46° 05.38'	60° 43.47'	Sep 23, 1996	12:46	23	0.219	5-22.5	3.5

Survey	Stn	Latitude (N)	Longitude (W)	Date	Time (UT)	Depth (m)	PAR k (m^{-1})	Range (m)	Secchi z (m)
96022	18	46° 04.16'	60° 49.00'	Sep 23, 1996	13:24	17	0.258	5-11.9	3.0
96022	19	46° 02.67'	60° 50.69'	Sep 23, 1996	13:54	10	0.278	5-9	
96022	20	45° 58.30'	61° 01.21'	Sep 23, 1996	15:46	31			2.0
96022	21	45° 56.77'	61° 07.32'	Sep 23, 1996	16:30	41	0.349	5-18.4	3.5
96022	22	46° 00.26'	60° 57.90'	Sep 23, 1996	17:49	12	0.430	5-9.5	3.0
96022	23	46° 03.25'	60° 53.76'	Sep 23, 1996	18:23	12	0.257	5-11	3.0
96022	24	46° 04.89'	60° 53.47'	Sep 23, 1996	18:43	12	0.283	5-9.4	2.5
96022	25	46° 04.51'	60° 51.92'	Sep 23, 1996	19:07	15	0.278	5-12	2.5
96022	26	46° 05.65'	60° 42.48'	Sep 24, 1996	11:14	19	0.330	5-18	4.5
96022	27	46° 05.12'	60° 41.21'	Sep 24, 1996	11:31	96	0.268	5-27.1	4.5
96022	28	46° 04.85'	60° 40.69'	Sep 24, 1996	11:52	21			4.5
96022	29	46° 08.05'	60° 36.31'	Sep 24, 1996	12:26	41	0.315	5-29.5	4.5
96022	30	46° 12.72'	60° 31.06'	Sep 24, 1996	13:11	96	0.251	5-32.2	4.5
96022	31	46° 14.54'	60° 29.13'	Sep 24, 1996	13:39	35			4.0
96022	32	46° 17.34'	60° 25.01'	Sep 24, 1996	14:08	19	0.777	5-10	1.0
96022	33	46° 14.16'	60° 30.00'	Sep 24, 1996	15:04	19	0.331	5-15.5	
96022	34	46° 11.02'	60° 33.89'	Sep 24, 1996	16:25	55			4.5
96022	35	46° 02.10'	60° 43.78'	Sep 24, 1996	17:53	189	0.215	5-38.6	4.0
96022	36	45° 59.08'	60° 46.07'	Sep 24, 1996	18:45	55			3.5
96022	37	45° 57.25'	60° 48.22'	Sep 25, 1996	11:06	48	0.243	5-29.7	4.5
96022	38	45° 53.64'	60° 54.51'	Sep 25, 1996	11:53	21	0.210	5-17.8	3.0
96022	39	45° 55.00'	60° 57.72'	Sep 25, 1996	12:22	15	0.274	5-12.6	3.0
96022	40	45° 52.43'	61° 04.30'	Sep 25, 1996	13:14	8			
96022	41	45° 53.77'	60° 59.97'	Sep 25, 1996	13:44	6			
96022	42	45° 54.20'	61° 03.22'	Sep 25, 1996	14:20	10	0.371	5-7.6	1.5
96022	43	45° 47.10'	61° 00.51'	Sep 25, 1996	16:17	71	0.229	5-27.3	4.5
96022	44	45° 46.90'	61° 05.11'	Sep 25, 1996	16:52	47	0.206	5-41	4.0
96022	45	45° 43.72'	61° 05.88'	Sep 25, 1996	17:24	37	0.249	5-20.5	4.0
96022	46	45° 48.19'	60° 54.72'	Sep 25, 1996	18:28	53	0.245	5-21.6	4.5
96022	47	45° 49.14'	60° 51.16'	Sep 25, 1996	18:53	144	0.219	5-24.2	4.5
96022	48	45° 50.88'	60° 45.88'	Sep 25, 1996	19:36	83	0.235	5-23	4.5
96022	49	45° 52.15'	60° 50.25'	Sep 25, 1996	20:13	46	0.220	5-23.7	4.0
96022	50	45° 55.29'	60° 49.61'	Sep 25, 1996	20:40	65	0.251	5-17.1	4.0
96022	51	45° 54.90'	60° 45.43'	Sep 27, 1996	11:32	81	0.214	5-29.3	

Survey	Stn	Latitude (N)	Longitude (W)	Date	Time (UT)	Depth (m)	PAR k (m^{-1})	Range (m)	Secchi z (m)
96022	52	45° 53.70'	60° 41.20'	Sep 27, 1996	12:08	16			
96022	53	45° 52.66'	60° 40.53'	Sep 27, 1996	12:19	40	0.203	5-29.7	5.5
96022	54	45° 51.78'	60° 39.67'	Sep 27, 1996	12:34	25			4.5
96022	55	45° 54.07'	60° 36.69'	Sep 27, 1996	12:59	33			4.5
96022	56	46° 00.42'	60° 24.50'	Sep 27, 1996	14:14	13	0.381	5-11.2	5.0
96022	57	45° 58.02'	60° 28.72'	Sep 27, 1996	14:44	80			5.0
96022	58	45° 56.45'	60° 31.68'	Sep 27, 1996	15:38	40			
96022	59	45° 57.46'	60° 34.47'	Sep 27, 1996	16:30	26	0.376	5-21.6	
96022	60	45° 57.26'	60° 35.13'	Sep 27, 1996	17:02	7			
96022	61	45° 44.59'	60° 48.13'	Sep 27, 1996	19:33	35	0.388	5-17.7	3.5
96022	62	45° 42.08'	60° 47.60'	Sep 27, 1996	19:58	19	0.463	5-16.1	2.5
96022	63	45° 40.51'	60° 49.71'	Sep 27, 1996	20:18	21	0.390	5-19.8	2.5
96022	64	45° 39.43'	60° 51.40'	Sep 27, 1996	20:40	25	0.283	5-23	2.5
97015	1	46° 07.45'	60° 42.28'	Jun 02, 1997	12:20	31	0.250	5-24.9	
97015	2	46° 04.06'	60° 49.07'	Jun 02, 1997	13:37	14			
97015	3	46° 03.22'	60° 53.84'	Jun 02, 1997	13:00	13	0.041	5-9.5	
97015	4	46° 00.22'	60° 57.87'	Jun 02, 1997	13:00	10	0.327	5-10	
97015	5	45° 58.23'	61° 01.27'	Jun 02, 1997	15:32	40	0.181	5-36.3	
97015	6	45° 56.90'	61° 07.47'	Jun 02, 1997	16:10	44	0.277	5-16.6	
97015	7	45° 59.98'	60° 59.76'	Jun 02, 1997	17:54	14	0.420	5-12.4	
97015	8	46° 00.15'	60° 59.61'	Jun 02, 1997	18:06	20	0.390	5-17.8	
97015	9	46° 00.39'	60° 59.24'	Jun 02, 1997	18:41	7	0.511	5-7	
97015	10	46° 00.29'	60° 59.36'	Jun 02, 1997	18:54	11			
97015	11	46° 00.17'	60° 59.45'	Jun 02, 1997	19:01	20			
97015	12	46° 00.10'	60° 59.61'	Jun 02, 1997	19:07	19			
97015	13	46° 04.89'	60° 53.54'	Jun 02, 1997	20:11	12	0.127	5-10.9	
97015	14	46° 05.35'	60° 43.61'	Jun 02, 1997	21:08	22	0.220	5-20.1	
97015	15	46° 03.34'	60° 37.75'	Jun 03, 1997	11:11	159			
97015	16	46° 02.11'	60° 43.44'	Jun 03, 1997	11:49	186	0.220	5-34.1	
97015	17	45° 57.14'	60° 48.36'	Jun 03, 1997	12:44	52			
97015	18	45° 55.42'	60° 49.88'	Jun 03, 1997	13:02	64			
97015	19	45° 49.27'	60° 51.02'	Jun 03, 1997	13:52	146	0.186	5-37.3	
97015	20	45° 53.63'	60° 54.56'	Jun 03, 1997	14:36	20	0.198	5-17.4	

Survey	Stn	Latitude (N)	Longitude (W)	Date	Time (UT)	Depth (m)	PAR k (m^{-1})	Range (m)	Secchi z (m)
97015	21	45° 55.02'	60° 57.74'	Jun 03, 1997	15:16	12			
97015	22	45° 54.18'	61° 03.63'	Jun 03, 1997	15:52	9			
97015	23	45° 52.42'	61° 04.19'	Jun 03, 1997	16:28	5			
97015	24	45° 53.45'	61° 00.93'	Jun 03, 1997	17:31	8			
97015	25	45° 54.58'	61° 01.75'	Jun 03, 1997	20:48	1			
97015	26	45° 54.10'	61° 05.42'	Jun 03, 1997	21:09	1			
97015	27	45° 52.72'	61° 06.90'	Jun 03, 1997	21:24	2			
97015	28	45° 53.31'	61° 06.61'	Jun 03, 1997	21:33	1			
97015	29	45° 51.26'	61° 05.33'	Jun 03, 1997	21:46	4			
97015	30	45° 50.18'	61° 10.63'	Jun 03, 1997	22:03	3			
97015	31	45° 39.41'	60° 51.32'	Jun 04, 1997	11:36	29	0.226	5-22.3	
97015	32	45° 41.08'	60° 49.73'	Jun 04, 1997	12:08	23	0.199	5-17.9	
97015	33	45° 44.65'	60° 48.02'	Jun 04, 1997	12:42	42	0.171	5-40.1	
97015	34	45° 42.00'	60° 47.50'	Jun 04, 1997	14:21	24			
97015	35	45° 40.05'	60° 51.54'	Jun 04, 1997	15:15	12	0.215	5-12.4	
97052	1	45° 39.36'	60° 51.39'	Sep 25, 1997	11:45	27	0.342	5-25.4	
97052	2	45° 40.01'	60° 51.59'	Sep 25, 1997	12:34	12	0.374	5-11.9	
97052	3	45° 41.08'	60° 49.72'	Sep 25, 1997	13:04	20	0.267	5-18	
97052	4	45° 42.05'	60° 47.40'	Sep 25, 1997	13:27	26	0.251	5-21	
97052	5	45° 44.59'	60° 47.94'	Sep 25, 1997	13:57	44	0.229	5-35.4	
97052	6	45° 49.21'	60° 51.06'	Sep 25, 1997	15:03	157	0.218	5-30.4	
97052	7	45° 53.57'	60° 54.51'	Sep 25, 1997	16:05	20	0.221	5-19.6	
97052	8	45° 54.92'	60° 57.73'	Sep 25, 1997	16:40	13	0.217	5-13.8	
97052	9	45° 54.12'	61° 03.34'	Sep 25, 1997	17:10	10	0.354	5-9	
97052	10	45° 52.43'	61° 04.12'	Sep 25, 1997	18:02	6			
97052	11	45° 53.54'	61° 00.00'	Sep 25, 1997	18:54	5			
97052	12	45° 57.19'	60° 48.31'	Sep 26, 1997	11:21	54	0.191	5-36.6	
97052	13	45° 55.40'	60° 49.82'	Sep 26, 1997	11:43	65	0.197	5-39.4	
97052	14	46° 02.17'	60° 43.54'	Sep 26, 1997	12:39	189	0.193	5-34	
97052	15	46° 03.36'	60° 37.64'	Sep 26, 1997	13:20	161	0.180	5-41.3	
97052	16	46° 08.70'	60° 30.04'	Sep 26, 1997	14:20	265	0.166	5-48	
97052	17	45° 54.59'	61° 01.77'	Sep 26, 1997	16:57	1			
97052	18	45° 54.09'	61° 05.40'	Sep 26, 1997	17:22	2			

Survey	Stn	Latitude (N)	Longitude (W)	Date	Time (UT)	Depth (m)	PAR k (m^{-1})	Range (m)	Secchi z (m)
97052	19	45° 53.33'	61° 06.58'	Sep 26, 1997	17:42	1			
97052	20	45° 52.67'	61° 06.88'	Sep 26, 1997	17:59	2			
97052	21	45° 51.25'	61° 05.34'	Sep 26, 1997	18:15	5			
97052	22	45° 50.19'	61° 10.66'	Sep 26, 1997	18:45				
97052	23	45° 56.75'	61° 07.47'	Sep 27, 1997	12:59	46	0.285	5-16.5	
97052	24	45° 58.25'	61° 01.22'	Sep 27, 1997	14:13	39	0.248	5-23.4	
97052	25	46° 00.22'	60° 57.89'	Sep 27, 1997	15:08	12	0.252	5-9.5	
97052	26	46° 07.45'	60° 42.25'	Sep 28, 1997	11:31	28	0.318	5-26.8	
97052	27	46° 04.97'	60° 53.47'	Sep 28, 1997	13:33	13	0.340	5-10	
97052	28	46° 03.15'	60° 53.62'	Sep 28, 1997	14:04	12	0.288	5-9.9	
97052	29	46° 00.02'	60° 59.74'	Sep 28, 1997	15:47	18	0.388	5-11.4	
97052	30	46° 00.20'	60° 59.52'	Sep 28, 1997	16:09	21	0.380	5-18.4	
97052	31	46° 00.34'	60° 59.32'	Sep 28, 1997	16:53	7			
97052	32	46° 03.94'	60° 48.91'	Sep 28, 1997	18:21	16	0.293	5-14	
97052	33	46° 05.24'	60° 43.47'	Sep 28, 1997	18:50	22	0.268	5-20.4	

Appendix B. Data for nutrient and related parameters for Bras d'Or Lakes Surveys 95908, 96002, 96013, 96022, 97015 and 97052.

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (μM)	PO_4 (μM)	NO_3+NO_2 (μM)	NO_2 (μM)	NH_3 (μM)	O_2 (μM)	O2 Satn (%)	H_2S (μM)	Chl *a* (μg/L)	Phaeo (μg/L)
95908	1	5	21.595	15.60	6.17	0.290	0.00	0.075	0.69					
95908	1	5	20.654	15.60	5.75	0.39	0.28	0.120	1.42	264	97			
95908	1	25	22.987	2.80	68	18.8	0.00	0.162	99	0	0			
95908	1	44	23.084	2.70	113	24.3	0.00	0.373	191	0	0			
95908	2	1	21.602	15.20	5.96	0.269	0.13	0.092	0.95	277	101			
95908	2	5	21.630	15.20	5.91	0.264	0.14	0.086	1.02	274	100			
95908	3	5	22.010	15.60	4.58	0.234	0.20	0.072	1.02	268	99			
95908	3	5	22.012	15.60	4.44	0.201	0.00	0.068	0.60					
95908	3	19	22.952	3.20	14.6	1.52	8.88	0.138	1.15	192	54			
95908	3	30	23.118	1.80	21.3	1.82	9.90	0.167	1.59	141	38			
95908	3	30	23.120	1.80	24.5	2.11	12.5	0.089	0.63					
95908	4	5	22.002	15.50	4.66	0.226	0.16	0.153	1.36	269	99			
95908	4	13	23.123	10.10	8.68	0.79	2.54	0.411	1.28	189	62			
95908	5	5	21.162	15.30	7.26	0.159	0.18	0.320	1.40	280	102			
95908	5	5	21.253	15.30	7.25	0.170	0.03	0.069	0.70					
95908	5	9	22.924	16.20	6.30	0.37	0.11	0.114	1.52	229	86			
95908	6	5	22.227	15.70	5.80	0.147	0.00	0.080	0.97	275	102			
95908	6	9	23.183	16.30	3.63	0.196	0.00	0.127	1.47	259	98			
95908	7	5	22.590	16.70	5.07	0.252	0.00	0.089	1.08	274	104			
95908	7	10	23.350	16.30	5.50	0.46	0.05	0.096	0.88					
95908	7	10	23.331	16.30	5.42	0.43	0.07	0.110	1.23	238	90			
95908	8	5	22.812	16.60	3.80	0.172	0.22	0.317	1.64	274	104			
95908	8	9	23.245	16.20	4.29	0.249	0.06	0.179	1.22	245	92			
95908	8	9	23.221	16.20	4.23	0.236	0.00	0.071	0.58					
95908	9	5	22.755	15.90	4.24	0.166	0.00	0.081	0.84	277	103			
95908	9	5	22.790	15.90	4.11	0.047	0.17	0.059	0.60					
95908	9	9	23.145	15.90	2.97	0.152	0.00	0.083	0.91	273	102			
95908	10	5	22.900	15.80	3.42	0.126	0.00	0.075	0.64	278	104			
95908	10	20	24.715	15.30	7.13	0.43	0.65	0.195	1.36	223	83			
95908	11	7	23.067	15.40	1.97	0.110	0.01	0.076	0.61	277	102			
95908	11	7	23.073	15.40	2.41	0.079	0.01	0.075	0.61					

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
95908	11	25	25.028	10.20	4.76	0.43	1.93	0.308	0.75	247	83			
95908	11	25	25.042	10.20	5.25	0.42	2.03	0.276	0.74					
95908	11	75	25.264	1.20	7.39	0.71	5.21	0.090	0.72	321	86			
95908	12	1	21.267	15.30	2.53	0.154	0.00	0.113	0.70	279	102			
95908	12	7	21.639	15.50	2.51	0.283	0.41	0.313	1.73	255	94			
95908	12	7	21.778	15.50	2.93	0.274	0.06	0.144	1.25					
95908	13	1	20.456	15.30	3.29	0.142	0.00	0.080	0.71	274	100			
95908	13	5	21.101		2.33	0.177	0.00	0.091	0.82	267				
95908	13	5	20.968		2.90	0.150	0.02	0.066	0.72					
95908	14	3	21.193	15.30	2.40	0.157	0.00	0.120	1.04	270	99			
95908	14	3	21.188	15.30	2.78	0.148	0.00	0.069	0.63					
95908	15	5	21.873	14.10	1.88	0.137	0.00	0.068	0.75	286	102			
95908	15	20	21.878	10.90	3.67	0.37	0.06	0.175	1.25	265	88			
95908	16	5	21.862	14.00	2.46	0.150	0.01	0.075	0.62	287	102			
95908	16	20	21.806	10.80	3.25	0.254	0.00	0.152	0.76	273	91			
95908	17	5	21.947	14.60	1.84	0.125	0.00	0.123	0.73	283	102			
95908	17	5	21.933	14.60	1.92	0.095	0.00	0.064	0.64					
95908	17	20	21.950	12.80	3.25	0.269	0.08	0.183	0.65	268	93			
95908	17	75	22.333	3.20	6.86	0.61	4.61	0.084	0.65	287	80			
95908	18	5	21.919	14.60	1.65	0.106	0.00	0.064	0.70	282	102			
95908	18	20	22.291	12.30	3.17	0.257	0.17	0.207	0.56	252	87			
95908	19	5	21.627	15.00	0.86	0.079	0.00	0.064	0.77	282	103			
95908	19	20	22.172	10.10	4.68	0.41	1.37	0.173	0.65	264	87			
95908	20	5	21.876	12.60	3.63	0.282	0.01	0.113	0.71	267	92			
95908	20	20	21.955	10.60	4.82	0.40	1.25	0.158	0.59	260	86			
96002	1	1	20.430	4.33	0.42	0.219	0.04	0.116	1.76	358	101			
96002	1	5	20.496	2.96	0.30	0.172	0.03	0.111	2.54	360	98		0.08	0.09
96002	1	15	21.620	1.13	0.24	0.32	0.08	0.142	1.22	352	92		0.40	0.00
96002	1	25	21.959	0.78	8.25	0.93	3.00	0.162	1.37	283	74			
96002	2	1	21.122	3.33	0.32	0.195	0.03	0.128	1.78	370	103		0.24	0.00
96002	2	14	21.828	1.54	0.37	0.251	0.03	0.119	1.45	382	101		0.24	1.05
96002	3	1	21.292	3.19	0.07	0.195	0.01	0.121	1.23	372	103		0.32	0.00
96002	3	5	21.389	2.70	0.13	0.184	0.05	0.112	1.83	374	102		0.32	0.13

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
96002	3	18	21.859	1.44	0.24	0.241	0.04	0.125	1.27	378	100		0.16	0.00
96002	4	1	21.759	2.20	0.01	0.210	0.00	0.120	1.30	380	103			
96002	4	5	21.756	2.13	0.23	0.212	0.04	0.116	1.17	380	102		0.32	0.24
96002	4	15	21.815	1.69	0.14	0.211	0.00	0.124	1.65	380	101		0.24	0.43
96002	4	37	21.953	1.04	0.20	0.279	0.06	0.130	1.37	377	99			
96002	5	1	21.680	2.35	0.23	0.227	0.01	0.111	1.36	375	101		0.00	0.60
96002	5	5	21.672	2.24	0.23	0.205	0.00	0.109	1.31	374	101		0.00	0.00
96002	5	15	21.743	1.56	0.61	0.262	0.08	0.136	2.13	369	98		0.00	0.00
96002	6	1	21.651	2.81	0.13	0.203	0.04	0.124	2.02	379	104			
96002	6	5	21.650	2.79	0.23	0.207	0.01	0.124	2.57	378	104		0.16	0.06
96002	6	35	21.781	1.62	0.35	0.250	0.02	0.122	1.95	376	100			
96002	7	1	21.667	3.42	0.07	0.192	0.00	0.116	1.63	375	105		0.00	0.17
96002	7	11	21.681	2.90	0.45	0.189	0.02	0.124	3.24	376	103		0.08	0.42
96002	7	46	21.864	1.51	0.21	0.218	0.00	0.117	1.46	378	100			
96002	8	4	22.572	2.85	0.73	0.197	0.22	0.126	1.35	370	102		0.32	0.24
96002	8	22	24.340	0.85	3.59	0.44	1.84	0.186	1.73	362	96		0.16	0.46
96002	9	7	22.862	2.88	0.69	0.198	0.01	0.120	1.25	374	104		0.40	0.44
96002	9	17	24.261	1.04	3.27	0.42	1.49	0.183	1.90	363	97		0.88	0.00
96002	11	1	21.720	3.26	1.35	0.190	0.00	0.104	1.11	367	102			
96002	11	7	22.995	2.68	0.88	0.214	0.11	0.120	1.16	373	103		1.92	0.00
96002	11	40	24.970	0.46	4.16	0.48	2.31	0.175	2.26	360	95		0.40	0.00
96002	11	75	25.644	-0.07	6.04	0.58	3.44	0.178	1.68	364	95			
96002	11	100	25.718	-0.10	6.74	0.62	3.79	0.167	1.48	364	95			
96002	11	140	25.705	-0.10	6.61	0.62	3.73	0.175	1.75	363	95			
96002	15	7	22.470	2.80	1.04	0.251	0.03	0.110	1.31	374	103		0.32	0.46
96002	15	40	24.880	0.64	3.88	0.45	2.13	0.158	2.10	360	95		0.16	0.18
96002	15	75	25.642	-0.07	5.35	0.55	3.16	0.163	1.81	368	96			
96002	15	100	25.746	-0.10	7.33	0.70	3.74	0.167	2.12	364	95			
96002	15	140	25.710	-0.10	6.96	0.61	3.84	0.165	1.63	362	94			
96002	15	175	25.717	-0.10	6.66	0.63	3.61	0.158	1.65	362	94			
96002	16	1	22.330	4.70	1.17	0.214	0.03	0.106	1.33	363	105		0.40	0.00
96002	16	4	22.324	4.70	1.29	0.198	0.00	0.098	1.26	362	105		0.40	0.05
96002	16	7	22.332	4.60	1.56	0.233	0.04	0.105	1.75	363	105		0.32	0.24
96002	17	5	22.291**	4.20	1.04	0.193	0.00	0.103	1.20	365	104		0.48	0.02

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
96002	17	15	22.374	3.84	1.46	0.31	0.05	0.110	1.84	367	104		0.32	0.30
96002	18	1	22.140	4.71	1.21	0.182	0.00	0.079	1.29	366	106		0.24	0.43
96002	18	5	22.271	4.04	1.25	0.216	0.01	0.206	0.98				0.24	0.54
96002	18	15	22.582	3.27	1.32	0.194	0.10	0.430	1.19	369	103		0.40	0.33
96002	18	32	24.805	0.77	11.0	0.86	5.15	0.219	1.58	313	83			
96002	19	1	22.161	3.82	0.56	0.163	0.03	0.096	1.19	369	104		0.16	0.23
96002	19	5	22.261	3.35	0.57	0.174	0.04	0.093	1.09	372	104		0.08	0.48
96002	19	15	22.678	3.14	1.00	0.158	0.12	0.099	1.19	373	104		0.00	1.03
96002	19	50	25.110	0.53	8.14	0.65	5.31	0.152	1.20	336	89		0.08	0.03
96002	19	100	25.393	0.35	14.2	0.91	8.56	0.110	0.81	295	78			
96002	19	150	25.572	0.21	25.7	1.43	13.5	0.103	0.75	223	59			
96002	19	200	25.599	0.17	26.8	1.55	13.7	0.107	0.89	215	56			
96002	19	257	25.609	0.17	26.0	1.51	12.6	0.075	0.90	210	55			
96002	20	1	22.380	4.21	0.75	0.144	0.06	0.089	1.35	370	105		0.24	0.38
96002	20	5	22.543	3.66	0.93	0.170	0.06	0.096	1.03	371	104		0.32	0.24
96002	21	5	22.107	3.05	0.93	0.210	0.07	0.098	1.48	371	103		0.00	0.67
96002	21	10	22.760	2.84	0.59	0.204	0.11	0.103	1.51	373	103		0.40	0.05
96002	23	1	21.347	4.20	1.77	0.149	0.08	0.094	1.24	367	104		0.48	0.25
96002	23	7	22.685	3.10	0.80	0.190	0.08	0.098	1.31	373	104		0.24	0.43
96002	23	21	24.184	2.05	0.84	0.262	0.22	0.103	1.62	373	102			
96002	23	46	25.116	1.58	1.09	0.31	0.42	0.114	1.64	376	102			
96002	23	88	26.299	-0.15	0.81	0.56	0.77	0.136	3.73	363	95		0.16	0.57
96002	25	5	22.535	3.11	0.72	0.234	0.07	0.100	1.27	371	103		0.24	0.32
96002	25	10	22.837	2.81	0.66	0.225	0.09	0.097	1.00	372	103		0.32	0.18
96002	26	7	22.600	3.04	1.17	0.274	0.09	0.088	1.24	372	103		0.48	0.19
96002	26	30	26.347	1.33	0.58	0.39	0.13	0.105	1.35	379	103		0.24	0.15
96002	27	1	24.140	3.24	1.22	0.298	0.12	0.096	1.46	371	104		0.40	0.50
96002	27	7	24.733	2.63	0.67	0.32	0.10	0.092	1.38	375	105		0.16	0.12
96002	27	12	28.255	1.09	0.11	0.38	0.07	0.097	1.29	390	107		0.00	0.50
96002	28	1	23.864	3.36	0.35	0.207	0.06	0.070	1.31	371	105		0.16	0.29
96002	28	7	25.726	2.01	0.12	0.34	0.12	0.085	1.44	376	104		0.00	0.28
96002	28	17	28.027	1.21	0.33	0.44	0.14	0.105	1.40	386	106		0.16	0.06
96002	29	1	21.649	4.28	1.46	0.144	0.06	0.070	1.25	367	104		0.48	0.02
96002	29	7	22.827	3.64	0.99	0.35	0.06	0.077	1.74	370	104		0.24	0.04

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
96002	29	29	26.437	1.36	0.50	0.39	0.20	0.096	1.50	379	103		0.16	0.06
96002	29	79	27.375	0.98	0.46	0.41	0.22	0.097	2.22	382	104		0.08	0.20
96002	30	1	19.609	5.39	4.58	0.178	0.25	0.073	1.35	361	104		0.48	0.19
96002	30	5	22.129	2.95	0.83	0.207	0.04	0.075	1.30	373	103		0.48	0.14
96002	30	17	23.364	1.96	1.12	0.240	0.35	0.096	1.82	371	101		0.24	0.60
96002	31	1	20.338	5.43	2.58	0.245	0.17	0.068	1.20	363	105		0.00	0.64
96002	31	5	22.138	3.06	1.48	0.222	0.10	0.080	1.63	387	107		0.00	0.28
96002	31	11	22.818	2.67	0.67	0.213	0.07	0.082	1.34	374	103		0.32	0.41
96002	32	1	18.679	4.71	6.70	0.164	0.54	0.069	0.96	363	102		0.08	0.42
96002	32	5	22.081	3.03	0.80	0.218	0.03	0.072	1.05	372	103		0.40	0.55
96002	32	11	23.391	1.71	0.76	0.260	0.22	0.097	2.83	373	101		0.40	0.55
96002	33	1	10.803	3.42	11.9	0.63	3.36	0.318	2.60	370	96		0.00	0.55
96002	33	5	22.199	2.94	1.08	0.222	0.08	0.075	0.90	372	103		0.64	0.70
96002	33	20	24.067	0.65	4.41	0.65	1.05	0.154	5.90	317	83			
96002	34	4	21.454	2.87	2.19	0.240	0.16	0.069	1.70	373	102		0.72	0.34
96002	34	8	22.742	2.48	0.98	0.260	0.07	0.071	1.18	375	103			
96002	35	4	18.364	3.01	6.13	0.219	0.67	0.064	1.59	372	100			
96002	36	1	9.230	5.94	18.1	0.102	2.61	0.087	1.22	370	101		0.56	0.45
96002	36	5	21.687	2.95	1.25	0.225	0.07	0.068	1.11	373	102			
96002	37	1	14.784	4.32	9.63	0.226	0.95		1.57	357	97		0.48	0.75
96002	37	4	21.261	2.98	1.02	0.30	0.11		1.49	369	101			
96002	37	7	22.781	1.83	0.74	0.32	0.06	0.090	1.64	375	101		0.56	0.56
96002	38	1	15.316	6.50	7.28	0.37	0.59		2.07	350	101		0.64	0.65
96002	38	5	17.657	6.17	3.37	0.36	0.20		1.68	351	102		0.16	1.13
96002	38	25	23.068	3.20	38.1	10.4	0.00		53	0	0	37		
96002	38	42	23.073	2.94	42.0	12.1	0.00		66	0	0	49		
96002	39	1	17.936	6.31	1.94	0.35	0.01		1.34	354	103		0.88	0.18
96002	39	5	17.958	6.26	1.93	0.43	0.05		1.64	353	103		0.56	0.67
96002	39	25	23.272	2.05	15.2	1.21	8.17		1.32	254	69		0.24	0.83
96002	39	32	23.306	2.08	14.7	1.20	7.51		1.69	239	65			
96002	41	1	12.934	6.45	11.0	0.198	1.11		1.82	360	102		0.24	0.15
96002	41	5	20.653	2.44	2.76	0.222	0.11		1.31	368	99		0.32	0.07
96002	41	11	23.136	2.16	0.83	0.30	0.05		1.29	369	101		0.32	0.58
96002	42	7	22.448	3.79	1.04	0.218	0.00		1.88	369	104		0.08	0.31

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
96002	42	32	24.785	0.99	3.92	0.52	2.09		2.17	361	96			
96002	44	1	21.864	4.36	1.07	0.226	0.02		3.23	368	105		0.00	0.56
96002	44	5	21.857	4.33	1.16	0.267	0.00		1.24	368	105		0.00	0.19
96002	44	15	23.205	2.13	1.37	0.294	0.40		2.31	370	101		0.64	0.03
96002	44	50	25.064	0.63	5.79	0.60	3.59		1.63	349	93			
96002	44	122	25.514	-0.04	5.47	0.59	2.89		1.99	363	95			
96002	46	1	22.164	4.37	0.81	0.233	0.00		1.32	365	105		0.00	0.11
96002	46	5	22.158	4.37	0.95	0.251	0.01		1.74	365	104		0.16	0.06
96002	46	15	22.630	2.68	1.30	0.272	0.19		1.64	367	101		0.00	0.36
96002	46	222	25.683	0.18	27.9	1.60	14.5		1.25	215	57			
96002	47	7	21.811	3.54	0.04	0.194	0.00		1.38	374	105		0.40	0.22
96002	47	25	22.579	2.81	0.50	0.221	0.15		1.29	367	101		0.40	0.72
96002	48	1	21.573	3.69	0.00	0.167	0.01		1.40	373	105		0.00	0.90
96002	48	5	21.578	4.06	0.53	0.188	0.03		1.16	373	105		0.16	0.46
96002	48	30	23.313	1.88	1.07	0.33	0.63		1.19	381	103		0.32	1.08
96002	48	62	23.581	1.37	3.46	0.46	1.25		1.67	357	95			
96002	49	1	20.677	4.19	0.07	0.176	0.04		1.29	372	105		0.00	0.50
96002	49	5	21.710	3.40	0.00	0.193	0.04		1.18	372	103		0.48	0.25
96002	49	11	22.141	2.78	0.00	0.214	0.04		1.21	379	104		0.00	0.73
96002	50	1	12.749	7.35	6.32	0.098	0.04		1.19	352	102		0.16	0.96
96002	50	7	21.313	2.43	0.00	0.215	0.08		1.85	384	104		0.48	0.47
96002	51	1	10.457	8.21	9.38	0.106	0.49		1.22	356	104		0.24	0.54
96002	51	4	19.235	3.03	1.00	0.178	0.06		1.21	381	103		0.48	0.70
96002	52	1	11.418	7.43	8.16	0.097	0.08		1.07	354	102		0.40	0.89
96002	52	3	16.295	3.68	3.97	0.177	0.06		1.33	365	99		0.96	0.16
96002	53	5	21.314	3.85	0.00	0.175	0.04		1.03	372	105		0.24	0.04
96002	53	15	22.289	2.36	0.13	0.229	0.07		2.07	377	103		0.08	1.71
96002	54	1	21.641	3.86	0.00	0.149	0.03		1.34	370	104		0.00	0.19
96002	54	5	21.644	3.62	0.03	0.179	0.03		1.35	373	104		0.00	0.50
96002	54	20	21.714	2.87	0.11	0.206	0.03		1.06	377	103		0.08	0.42
96002	54	45	22.130	0.96	1.25	0.31	0.39		1.67	367	96			
96002	55	1	21.614	3.90	0.06	0.162	0.09		1.03	371	105		0.00	0.22
96002	55	5	21.626	3.68	0.07	0.149	0.10		1.06	375	105		0.00	0.45
96002	55	15	21.646	3.51	0.28	0.180	0.13		1.08	374	104		0.88	0.00

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
96002	55	50	22.156	0.89	0.79	0.35	0.29		1.46	372	97		0.24	1.16
96002	55	70	22.329	0.31	2.50	0.34	0.79		1.88	371	96			
96002	55	112	22.492	-0.11	6.15	0.48	1.92		2.12	368	94			
96002	56	1	21.559	4.73	0.02	0.136	0.06		0.93	369	106		0.00	0.22
96002	56	5	21.558	3.85	0.00	0.134	0.07		1.03	371	104		0.24	0.26
96002	56	25	21.882	1.37	0.01	0.188	0.09		1.15	382	101		0.48	0.87
96002	56	50	22.131	0.95	0.78	0.294	0.36		1.37	372	97			
96002	56	72	22.287	0.21	2.80	0.34	0.86		2.04	367	94			
96002	57	1	21.311	4.32	1.00	0.158	0.10		1.29	373	106		0.08	0.42
96002	57	5	21.490	4.26	0.21	0.110	0.06		1.85	373	106		0.16	0.23
96002	57	35	22.011	0.79	0.59	0.273	0.19		1.15	373	97		1.12	1.07
96002	57	72	22.184	0.03	4.23	0.45	0.79		2.53	359	92			
96002	58	1	20.724	6.74	1.60	0.149	0.06		1.35	361	108		0.16	0.40
96002	58	5	21.135	4.46	0.50	0.161	0.03		1.92	380	108		0.16	0.29
96002	59	1	20.446	6.28	0.91	0.131	0.03		1.36	366	108		0.16	0.46
96002	59	5	20.563	5.14	1.21	0.150	0.06		1.11	367	106		0.16	0.29
96002	59	38	21.786	1.23	0.64	0.31	0.11		1.50	369	97		0.88	1.59
96002	60	1	19.221	5.71	1.79	0.144	0.03		1.21	369	107		0.40	0.38
96002	60	7	21.003	4.22	0.20	0.117	0.02		1.62	378	107		0.24	0.32
96002	61	1	21.332	4.65	0.24	0.154	0.01		1.13	370	106		0.24	0.21
96002	61	5	21.368	4.60	0.29	0.144	0.01		1.22	371	106		0.24	0.10
96002	61	20	21.833	1.79	0.34	0.229	0.02		0.95	373	100		0.56	0.73
96002	63	1	21.562	4.29	0.16	0.144	0.00		0.98	372	106		0.32	0.41
96002	63	5	21.562	4.31	0.09	0.112	0.00		0.97	373	106		0.24	0.32
96002	63	25	21.852	1.74	0.15	0.159	0.01		1.15	375	100		0.64	1.10
96013	2	1	22.335	15.59	1.73	0.260	0.09	0.102	< 0.6*	282	104			
96013	2	34	25.130	4.94	5.35	0.67	3.69	0.161	< 0.6*	318	94			
96013	2	69	25.206	1.14	8.77	0.87	6.62	0.131	< 0.6*	320	86			
96013	2	136	25.535	0.00	10.4	1.10	5.94	0.146	< 0.6*	338	88			
96013	3	7	22.457	14.41	2.00	0.286	0.07	0.105	< 0.6*	287	104			
96013	3	35	25.113	5.50	4.93	0.71	3.05	0.285	< 0.6*	315	95			
96013	4	1	22.258	16.24	2.06	0.226	0.03	0.094	< 0.6*	278	104			
96013	4	5	22.257	16.19	2.13	0.256	0.05	0.106	< 0.6*	278	104			

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
96013	4	15	22.626	9.70	2.23	0.192	0.15	0.102	< 0.6*	295	96			
96013	4	225	25.591	0.20	24.7	1.49	14.0	0.122	0.75	211	55			
96013	5	5	22.160	17.62	2.02	0.229	0.01	0.101	< 0.6*	269	103			
96013	5	15	22.233	17.16	2.17	0.280	0.03	0.108	< 0.6*	269	103			
96013	6	1	22.204	18.18	2.12	0.215	0.02	0.100	< 0.6*	267	104			
96013	6	4	22.204	18.16	1.98	0.190	0.00	0.097	< 0.6*	267	104			
96013	6	7	22.203	18.09	2.07	0.234	0.01	0.101	< 0.6*	267	104			
96013	7	1	22.095	17.71	1.75	0.193	0.00	0.096	< 0.6*	271	104			
96013	7	5	22.093	17.62	2.13	0.223	0.01	0.102	< 0.6*	271	104			
96013	7	15	22.322	12.59	2.25	0.223	0.02	0.100	< 0.6*	279	97			
96013	8	5	22.168	17.24	2.02	0.178	0.04	0.101	< 0.6*	273	104			
96013	8	25	24.707	2.94	5.08	0.56	3.29	0.137	< 0.6*	332	93			
96013	8	50	25.097	1.03	8.88	0.74	6.12	0.116	< 0.6*	323	87			
96013	8	100	25.457	0.32	17.4	1.16	11.1	0.111	< 0.6*	262	69			
96013	8	175	25.585	0.20	25.8	1.50	14.8	0.115	< 0.6*	214	56			
96013	9	1	22.210	17.25	1.90	0.173	0.01	0.092	< 0.6*	273	104			
96013	9	5	22.208	17.13	2.01	0.182	0.01	0.099	< 0.6*	274	104			
96013	9	15	22.841	10.88	2.17	0.201	0.03	0.097	< 0.6*	302	101			
96013	9	50	25.085	1.87	7.17	0.64	5.15	0.116	< 0.6*	326	89			
96013	9	100	25.440	0.33	16.6	1.10	11.2	0.113	< 0.6*	267	70			
96013	9	150	25.581	0.21	25.4	1.48	14.1	0.112	< 0.6*					
96013	9	257	25.595	0.19	27.3	1.57	14.9	0.110	< 0.6*	211	55			
96013	10	3	22.330	16.80	2.13	0.192	0.00	0.088	< 0.6*	276	105			
96013	10	7	22.385	15.68	2.15	0.198	0.06	0.087	< 0.6*	280	104			
96013	11	9	22.549	14.46	1.92	0.179	0.06	0.077	< 0.6*	297	107			
96013	11	42	25.288	5.69	5.26	0.51	3.12	0.306	< 0.6*	312	94			
96013	11	72	25.605	0.29	7.11	0.68	5.16	0.096	< 0.6*	348	92			
96013	11	97	25.659	0.06	8.16	0.74	5.67	0.105	< 0.6*	347	91			
96013	11	172	25.676	0.02	7.75	0.76	5.13	0.117	< 0.6*	346	91			
96013	12	7	22.564	13.97	1.61	0.164	0.00	0.077	< 0.6*	290	104			
96013	12	25	25.133	6.42	4.20	0.49	2.12	0.253	0.75	310	95			
96013	13	7	22.200	14.97	1.44	0.179	0.01	0.070	< 0.6*	285	104		0.32	0.18
96013	13	25	24.271	10.39	3.21	0.37	0.63	0.214	1.00	297	99		0.48	0.36
96013	14	1	21.471	16.26	0.93	0.116	0.00	0.064		281	105		0.32	0.02

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
96013	14	5	21.533	16.15	1.00	0.101	0.00	0.078	< 0.6*	282	105			
96013	14	30	24.121	9.63	3.56	0.35	0.85	0.315	2.00	301	99			
96013	14	53	24.246	8.01	4.82	0.47	1.46	0.454	2.00	302	96			
96013	15	5	21.499	16.40	1.02	0.107	0.00	0.059	< 0.6*	277	103			
96013	15	15	22.755	12.51	1.96	0.218	0.00	0.070	< 0.6*	293	102			
96013	16	1	20.360	19.08	1.37	0.201	0.12	0.070	0.70	295	116		0.48	0.30
96013	16	4	20.063	16.46	1.91	0.112	0.00	0.061	< 0.6*	274	102		0.40	0.10
96013	17	1	20.319	19.50	1.19	0.152	0.07	0.075	0.78	279	110		0.32	0.13
96013	17	4	20.336	18.76	1.14	0.146	0.08	0.074	0.69	278	108			
96013	18	1	20.406	19.53	1.31	0.154	0.06	0.070	0.73	267	106		0.32	0.13
96013	18	7	21.642	13.77	1.73	0.30	0.05	0.074	0.68	307	109		0.48	0.58
96013	19	1	21.007	17.34	1.16	0.157	0.04	0.072	0.76	278	105		0.24	0.21
96013	19	5	21.509	15.65	1.16	0.187	0.04	0.071	0.68	289	106		0.40	0.10
96013	19	11	21.882	13.88	1.49	0.230	0.05	0.074	0.73	293	104		0.56	0.39
96013	20	2	21.554	15.90	1.12	0.162	0.03	0.077	0.73	287	106		0.16	0.01
96013	20	6	21.560	15.58	1.10	0.168	0.03	0.075	0.73	287	106		0.24	0.04
96013	20	16	21.818	6.30	1.88	0.252	0.02	0.080	0.72	327	98		1.12	0.00
96013	20	62	22.063	5.13	4.15	0.39	0.25	0.211	0.77	306	89			
96013	21	1	21.531	15.99	1.17	0.163	0.01	0.073	0.76	291	108		0.24	0.00
96013	21	5	21.528	15.00	1.17	0.159	0.02	0.076	0.72	292	106		0.24	0.00
96013	21	25	21.702	4.13	5.72	0.39	0.03	0.085	0.84	286	81		0.72	0.46
96013	22	1	21.569	15.97	1.15	0.164	0.00	0.072	0.73	295	109		0.08	0.20
96013	22	5	21.601	14.57	1.25	0.189	0.03	0.074	0.71	298	107		0.16	0.18
96013	22	22	21.755	4.78	3.21	0.32	0.02	0.075	0.71	314	90			
96013	23	5	21.540	16.04	1.03	0.140	0.00	0.071	0.68	283	105		0.00	0.22
96013	23	25	22.247	6.10	2.18	0.294	0.17	0.180	0.72	321	96			
96013	23	42	22.449	6.30	2.91	0.34	0.42	0.278	0.79	315	95			
96013	26	1	22.236	15.61	1.60	0.188	0.34	0.067	0.94	280	103		0.32	0.07
96013	26	7	22.390	14.50	1.60	0.187	0.08	0.105	0.93	284	103		0.32	0.18
96013	26	40	25.216	5.28	5.06	0.56	3.13	0.130	0.76	315	94		0.00	0.28
96013	26	75	25.495	1.05	6.63	0.67	4.86	0.090	0.69	342	92			
96013	26	100	25.635	0.19	7.69	0.73	5.53	0.094	0.71	347	91			
96013	26	162	25.664	0.05	8.10	0.77	5.77	0.095	0.67	346	91			
96013	27	7	22.457	14.81	1.66	0.189	0.16	0.074	0.86	283	103		0.24	0.21

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
96013	27	18	25.135	10.91	3.17	0.42	0.88	0.215	1.05	289	98		0.56	0.39
96013	28	5	22.226	16.20	1.64	0.181	0.10	0.058	0.81	276	103		0.16	0.34
96013	28	10	22.505	15.34	1.81	0.196	0.01	0.064	0.75	283	104		0.40	0.22
96013	29	1	22.128	16.43	2.15	0.188	0.19	0.058	0.73	276	103		0.24	0.15
96013	29	4	22.140	16.04	2.13	0.170	0.19	0.058	0.76	276	103		0.40	0.05
96013	29	22	25.587	7.99	3.46	0.43	1.27	0.232	0.96	290	92		0.56	0.00
96013	29	47	25.362	6.25	5.32	0.56	3.11	0.320	0.76	308	94			
96013	29	84	26.092	1.41	10.3	1.32	1.53	0.343	12.0	295	80			
96013	30	5	22.250	15.88	1.97	0.170	0.21	0.060	0.70	279	104		0.40	0.27
96013	30	10	22.639	14.77	1.77	0.199	0.03	0.051	0.65	284	103		0.40	0.27
96013	31	1	22.408	15.91	1.93	0.156	0.19	0.057	0.77	278	103		0.40	0.00
96013	31	5	22.902	15.26	2.07	0.212	0.13	0.056	0.72	279	103		0.56	0.06
96013	31	17	26.158	13.90	1.94	0.34	0.10	0.073	1.07	283	103		0.16	0.46
96013	31	47	26.635	13.49	2.06	0.37	0.15	0.076	1.07	283	103			
96013	32	1	25.106	14.61	1.60	0.34	0.29	0.060	1.33	284	105		1.84	1.19
96013	32	7	25.623	14.48	1.52	0.280	0.08	0.057	0.70	285	105		0.48	0.42
96013	32	14	26.465	13.98	1.29	0.31	0.04	0.063	0.61	286	105		0.96	0.00
96013	33	1	23.744	14.96	1.83	0.213	0.23	0.058	0.78	282	104		0.96	0.61
96013	33	6	25.676	14.40	1.58	0.281	0.10	0.059	0.67	284	104		0.32	0.52
96013	33	20	28.259	12.99	0.99	0.37	0.04	0.066	0.69	289	105		0.56	0.28
96013	34	1	23.386	15.43	1.81	0.176	0.31	0.106	0.84	280	104		1.20	0.42
96013	34	5	23.730	15.31	1.71	0.170	0.34	0.097	1.04	277	103		0.72	0.34
96013	34	18	25.964	14.09	2.06	0.36	0.29	0.114	0.99	276	101		0.48	0.42
96013	35	1	21.654	15.93	1.83	0.114	0.53	0.106	0.88	277	103		0.64	0.31
96013	35	29	26.425	14.03	1.38	0.253	0.17	0.126	0.68	286	105		0.24	0.43
96013	35	71	27.229	13.63	1.37	0.31	0.23	0.119	0.79	286	105			
96013	36	7	22.262	15.75	1.91	0.136	0.45	0.106	0.70	277	103		0.72	0.46
96013	36	35	26.232	13.66	2.16	0.32	0.31	0.132	0.70	279	101		0.16	0.23
96013	37	1	21.075	16.06	2.36	0.114	0.61	0.134	0.83	265	98		0.88	0.35
96013	37	5	22.185	15.69	1.75	0.106	0.34	0.129	0.65	276	102		0.40	0.50
96013	37	11	23.469	13.32	2.23	0.199	0.14	0.120	0.55	288	102		0.40	0.38
96013	38	1	12.736	17.40	8.50	0.125	2.78	0.225	1.41	267	97		1.36	1.44
96013	38	5	21.979	15.24	2.63	0.131	0.40	0.132	0.88	272	99		0.24	0.77
96013	38	27	23.988	3.56	22.6	0.85	4.63	0.544	15.0	165	47		0.08	0.82

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
96013	39	5	21.762	15.14	2.93	0.157	0.24	0.147	0.56	289	105		0.40	0.44
96013	39	9	22.855	13.30	2.23	0.208	0.10	0.146	0.60	306	108		2.16	0.00
96013	40	1	20.504	17.12	3.26	0.187	0.39	0.144	0.61	274	103		0.64	0.42
96013	40	5	21.859	14.57	2.63	0.198	0.19	0.140	0.61	293	105		0.48	0.75
96013	40	7	22.574	12.96	2.38	0.225	0.13	0.168	0.60	307	108		0.32	0.80
96013	41	1	20.541	17.72	3.05	0.190	0.12	0.137	0.54	278	106		0.40	1.11
96013	41	5	21.698	12.55	3.03	0.256	0.19	0.140	0.48	326	112		0.40	1.06
96013	41	28	23.203	2.31	20.1	1.50	11.3	0.169	0.52	194	53	1.4		
96013	42	1	20.424	17.74	3.13	0.187	0.09	0.118	0.56	274	104	0.093	0.96	0.89
96013	42	5	20.457	14.50	3.37	0.207	0.09	0.122	0.54	276	98	0.090	0.96	1.11
96013	42	10	22.233	7.48	3.43	0.44	0.20	0.190	0.91	337	104	0.074	0.48	2.60
96013	42	15	22.653	3.79	18.4	3.87	1.85	0.537	30	87	25	0.074	1.12	7.57
96013	42	25	23.060	3.18	45.6	8.26	0.00	0.000	62	0	0	45	0.00	6.10
96013	42	42	23.071	3.01	54	9.16	0.00	0.000	75	0	0	52	0.00	0.73
96013	43	5	21.878	15.52	2.98	0.154	0.15	0.116	0.47	286	105		0.56	0.67
96013	43	7	22.540	14.49	2.29	0.168	0.07	0.117	0.43	290	105		0.08	0.99
96013	44	5	21.903	15.72	3.13	0.169	0.13	0.124	0.57	296	109		0.80	0.15
96013	44	9	22.818	12.09	2.21	0.232	0.05	0.120	0.69	296	102		0.32	0.74
96013	45	5	22.253	15.25	2.50	0.146	0.07	0.110	0.52	283	104		0.08	1.04
96013	45	9	22.754	13.91	1.99	0.155	0.03	0.105	0.61	287	103		0.16	0.79
96013	46	1	21.313	16.80	3.41	0.148	0.23	0.105	0.60	280	105		0.88	0.52
96013	46	5	21.797	15.94	2.50	0.140	0.06	0.096	0.59	285	106		0.56	0.78
96013	46	10	23.318	13.80	2.10	0.210	0.04	0.103	0.57	295	106		0.08	1.21
96013	47	1	21.703	16.61	2.65	0.104	0.17	0.095	0.50	278	104		0.40	1.06
96013	47	5	21.912	15.31	2.34	0.108	0.17	0.096	0.56	280	103		0.64	1.10
96013	47	20	25.707	11.02	2.96	0.35	0.75	0.196	1.03	281	96		0.08	0.26
96013	48	1	21.350	16.18	1.01	0.053	0.01	0.067	0.56	277	103			
96013	48	5	21.349	16.18	1.04	0.063	0.05	0.092	0.66	277	103			
96013	48	40	22.107	2.12	4.28	0.33	0.50	0.242	0.51	322	87			
96013	48	73	22.131	1.06	6.85	0.45	0.40	0.201	0.58	307	81			
96013	50	1	21.268	17.05	0.93	0.059	0.00	0.065	0.53	272	103			
96013	50	5	21.280	16.99	0.94	0.055	0.02	0.070	0.55	272	103			
96013	50	25	21.983	3.71	3.29	0.286	0.44	0.257	0.56	322	91			
96013	52	1	21.244	17.22	0.94	0.049	0.00	0.056	0.53	270	102			

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
96013	52	5	21.244	17.18	0.92	0.053	0.00	0.060	0.54	270	102			
96013	52	22	21.839	4.00	2.51	0.257	0.10	0.134	0.63	323	91			
96013	53	1	20.862	18.50	2.55	0.166	0.17	0.072	1.08	277	107			
96013	53	6	21.053	14.81	4.15	0.33	0.17	0.084	0.67	290	105			
96013	54	1	20.851	18.08	1.39	0.107	0.08	0.082	0.96	268	103			
96013	54	5	20.847	18.02	1.38	0.114	0.09	0.080	1.09	267	103			
96013	54	25	21.739	5.04	3.09	0.36	0.45	0.306	1.49	315	91			
96013	54	77	21.768	1.85	6.94	0.60	0.89	0.420	1.31	297	79			
96013	55	1	20.595	19.07	0.92	0.079	0.08	0.081	1.24	266	104			
96013	55	5	20.583	19.08	0.96	0.079	0.09	0.081	0.97	268	105			
96013	56	1	20.886	18.08	1.31	0.114	0.09	0.088	1.18	269	104			
96013	56	5	20.882	18.01	1.36	0.119	0.09	0.093	1.40	269	104			
96013	56	35	21.830	4.38	4.95	0.44	0.69	0.330	1.25	304	87			
96013	57	1	21.378	16.53	0.74	0.111	0.09	0.077	1.13	277	104			
96013	57	5	21.383	16.45	0.79	0.128	0.10	0.086	1.10	278	104			
96013	57	25	22.030	4.27	2.04	0.285	0.27	0.190	1.02	327	93			
96013	57	50	22.242	2.27	4.09	0.37	0.76	0.152	1.00	325	88			
96013	57	75	22.346	2.50	5.21	0.42	1.17	0.166	0.93	324	88			
96013	58	1	21.527	16.21	0.83	0.114	0.09	0.094	0.87	281	105			
96013	58	5	21.525	16.21	0.77	0.127	0.09	0.079	0.91	280	104			
96013	58	25	22.601	6.82	2.04	0.271	0.25	0.187	1.10	311	95			
96013	58	50	22.913	8.25	3.51	0.35	0.70	0.267	0.87	305	96			
96013	59	1	21.483	16.69	0.82	0.116	0.11	0.075	0.70	276	104			
96013	59	11	21.972	9.20	1.34	0.190	0.09	0.081	0.91	317	102			
96013	59	36	22.272	4.44	2.66	0.33	0.70	0.306	0.87	322	92			
96013	59	66	22.473	3.58	4.54	0.42	1.34	0.186	1.30	321	90			
96013	59	108	22.461	1.36	7.62	0.67	3.95	0.207	1.23	320	85			
96013	60	1	21.504	16.82	0.76	0.098	0.07	0.072	0.96	278	105			
96013	60	10	21.588	15.18	0.95	0.150	0.08	0.083	1.18	285	104			
96013	60	37	22.157	4.88	2.94	0.278	0.51	0.297	1.12	316	92			
96013	61	1	21.290	15.70	1.39	0.135	0.07	0.073	0.94	289	106			
96013	61	5	21.299	15.19	1.31	0.133	0.07	0.075	1.07	291	106			
96013	61	19	21.997	6.70	2.12	0.267	0.15	0.130	0.97	317	96			
96013	62	5	21.567	9.47	1.57	0.198	0.07	0.085	0.56	312	101			

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
96013	62	12	21.848	7.39	2.03	0.31	0.13	0.100	1.03	316	97			
96013	63	1	21.383	14.91	1.23	0.184	0.07	0.070	0.89	314	114			
96013	63	5	21.601	10.43	1.46	0.247	0.06	0.068	0.90	331	109			
96013	63	15	21.808	2.93	3.37	0.71	1.13	0.593	0.98	286	79			
96013	63	23	21.853	1.73	7.01	1.02	2.20	0.115	0.87	202	54			
96022	3	1	22.716	15.52	3.55	0.234	0.12	0.159	0.216	264	98		0.40	0.83
96022	3	7	22.699	15.56	3.50	0.213	0.05	0.074	0.176	265	98		1.20	0.09
96022	3	30	24.774	7.84	7.09	0.61	4.05	0.128	0.144	271	86		0.08	0.00
96022	3	65	25.232	4.60	8.29	0.73	5.66	0.098	0.35	290	85			
96022	3	90	25.584	0.73	9.36	0.81	6.59	0.091	0.50	325	87			
96022	3	110	25.606	0.53	9.57	0.81	6.69	0.099	0.60	327	87			
96022	4	4	22.642	15.73	3.54	0.198	0.06	0.065	0.31	208	77		0.48	1.15
96022	4	19	24.519	10.96	6.09	0.50	2.89	0.174	0.176	242	82		0.24	0.21
96022	6	1	22.437	16.15	4.47	0.188	0.10	0.098	0.71	266	99		0.96	0.61
96022	6	7	22.442	16.15	4.53	0.221	0.19	0.096	0.63	265	99		3.76	0.00
96022	6	38	24.780	6.90	6.98	0.60	4.04	0.113	0.53	274	85		0.48	0.00
96022	6	71	25.136	1.45	9.88	0.77	6.93	0.078	0.51	303	82			
96022	6	120	25.432	0.26	13.3	0.90	7.77	0.074	0.52	312	82			
96022	7	7	23.356	15.87	3.59	0.246	0.16	0.114	0.70	261	98		1.12	1.07
96022	7	35	24.854	6.63	7.08	0.64	4.63	0.134	0.76	282	87		0.88	0.00
96022	8	1	23.275	16.16	3.31	0.194	0.08	0.088	0.72	264	99		0.72	0.46
96022	8	5	23.274	16.17	3.34	0.207	0.10	0.095	0.75	264	99		1.28	0.18
96022	8	14	23.320	16.06	3.48	0.220	0.20	0.094	0.67				1.20	0.00
96022	8	209	25.568	0.21	29.6	1.50	15.0	0.101	0.67	212	56			
96022	9	5	23.277	16.26	3.30	0.223	0.17	0.140	0.69	265	100		1.20	0.00
96022	9	25	23.364	16.23	3.16	0.233	0.21	0.103	0.68	263	99		0.64	0.31
96022	9	50	24.890	2.90	7.32	0.72	5.18	0.108	0.67	305	86		2.00	0.00
96022	9	100	25.355	0.43	16.4	1.12	10.2	0.101	0.67	276	73			
96022	9	149	25.559	0.22	29.0	1.55	14.8	0.105	0.65	215	57			
96022	9	170	25.565	0.21	29.4	1.53	14.6	0.125	0.66	212	56			
96022	10	1	23.117	15.80	4.36	0.213	0.29	0.106	0.70	271	101		2.24	0.00
96022	10	5	23.117	15.80	4.03	0.204	0.12	0.082	0.66	270	101		0.72	0.34
96022	11	5	23.274	16.14	3.38	0.209	0.31	0.258	0.78	267	100		0.48	1.03

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
96022	11	15	23.296	16.06	3.34	0.292	0.22	0.184	0.86	265	99		0.80	0.54
96022	12	1	22.575	16.31	5.29	0.199	0.13	0.095	0.66	268	101		0.56	0.22
96022	12	5	23.103	16.19	3.76	0.197	0.26	0.210	0.74	267	100		0.64	0.82
96022	12	15	23.466	15.23	3.03	0.213	0.30	0.248	0.72	259	96		0.48	1.59
96022	13	1	22.900	16.14	3.20	0.176	0.19	0.144	0.73	268	100		0.80	0.26
96022	13	5	22.898	16.14	3.65	0.193	0.10	0.094	0.65	246	92		0.48	0.70
96022	13	15	23.455	16.06	3.24	0.232	0.55	0.161	0.66	267	100		0.64	0.48
96022	13	50	24.942	2.45	7.14	0.69	5.52	0.147	0.62	312	86		0.00	0.00
96022	13	100	25.391	0.42	16.7	1.08	10.4	0.219	0.65	268	71			
96022	13	150	25.550	0.23	27.5	1.51	14.4	0.159	0.64	218	57			
96022	13	247	25.575	0.21	27.1	1.43	13.2	0.099	0.64	210	55			
96022	14	1	23.619	15.68	3.12	0.232	0.17	0.079	0.61	271	101		0.40	0.72
96022	14	7	23.623	15.51	3.32	0.235	0.09	0.079	0.62	270	100		0.56	0.95
96022	15	1	21.897	15.59	6.45	0.206	0.13	0.102	0.68	266	98		0.64	1.10
96022	15	5	23.004	15.81	3.67	0.218	0.20	0.154	0.69	261	97		1.12	0.73
96022	15	13	23.740	15.63	4.06	0.30	0.68	0.189	0.90	244	91		0.80	1.61
96022	16	1	21.372	16.08	5.47	0.144	0.11	0.086	0.65	263	98		0.80	1.33
96022	16	5	22.373	16.28	5.63	0.224	0.10	0.092	0.57	257	96		0.80	1.44
96022	16	27	24.043	6.45	37.2	1.20	18.5	0.000	7.82	17	5		0.24	0.00
96022	17	1	22.066	15.84	6.63	0.233	0.67	0.113	0.58	260	97		1.44	1.98
96022	17	5	23.232	15.91	3.88	0.264	0.14	0.095	0.59	259	97		1.20	0.76
96022	17	17	24.073	14.86	4.33	0.37	1.42	0.366	1.21	250	92		0.64	0.20
96022	18	1	21.665	15.70	7.71	0.251	0.19	0.090	0.50	262	96		2.08	1.45
96022	18	5	22.261	16.32	4.79	0.188	0.42	0.133	0.79	259	97		2.00	0.97
96022	18	12	23.987	14.43	4.74	0.38	1.50	0.351	0.66	250	91		0.00	1.51
96022	19	5	22.128	16.33	7.00	0.33	0.33	0.121	1.99	242	90		1.60	1.76
96022	19	9	23.930	15.65	7.21	0.54	1.74	0.446	2.05	226	84		0.40	0.72
96022	20	1	20.072	15.55	8.27	0.33	0.11	0.088	0.57	269	98		1.36	2.39
96022	20	5	20.185	15.64	8.02	0.36	0.34	0.100	0.70	265	97		2.00	1.47
96022	20	27	23.166	2.71	27.7	1.90	14.9	0.202	0.58	117	32	0.031	0.00	0.00
96022	21	1	20.261	15.46	8.74	0.38	0.48	0.141	1.17	260	94		1.28	5.56
96022	21	5	21.153	15.76	7.21	0.46	0.46	0.128	1.25	256	94		3.52	2.08
96022	21	10	21.126	15.78	8.63	0.71	1.21	0.214	3.43	207	76		0.64	1.38
96022	21	15	22.386	5.25	17.6	2.23	11.9	1.558	9.13	45	13	0.031	0.48	1.65

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
96022	21	20	22.964	3.34	38.5	5.69	0.56	0.000	41	0	0	24		
96022	21	25	23.059	3.16	41.5	8.24	0.00	0.000	61	0	0	37	0.00	5.27
96022	21	39	23.077	3.03	53	10.2	0.00	0.000	86	0	0	45		
96022	22	1	21.258	15.54	6.84	0.30	0.47	0.140	1.59	259	95		2.16	1.20
96022	22	7	21.718**	15.93	7.67	0.291	0.52	0.141	1.45	258	96		2.24	1.57
96022	23	5	21.926	16.40	7.50	0.298	0.47	0.146	1.01	258	97		1.12	2.35
96022	23	9	23.584	15.23	5.76	0.36	1.20	0.277	1.37	243	90		0.96	0.44
96022	24	3	22.408	16.71	7.52	0.38	0.80	0.207	2.78	235	89		3.04	0.26
96022	24	6	23.430	16.41	6.42	0.43	0.98	0.256	2.51	234	88		0.88	0.86
96022	25	5	21.978	16.15	7.04	0.273	0.25	0.133	0.84	266	99		2.56	2.48
96022	25	9	23.565	16.01	5.91	0.37	1.01	0.228	1.37	243	91		3.60	0.00
96022	26	5	23.645	15.67	4.50	0.277	0.60	0.193	1.07	254	95		0.40	1.56
96022	26	14	23.918	15.94	3.87	0.257	0.37	0.168	1.38	251	94		0.08	1.60
96022	27	1	23.243	15.36	4.38	0.272	0.21	0.130	0.82	259	96		0.40	1.95
96022	27	7	23.503	15.66	4.38	0.232	0.29	0.149	0.95	239	89		0.96	1.06
96022	27	25	24.133	15.60	4.76	0.288	0.74	0.209	1.51	247	92		0.08	1.27
96022	27	50	25.006	6.61	8.58	0.61	5.39	0.138	0.70	272	84			
96022	27	87	25.407	4.42	19.1	1.39	10.9	0.200	2.64	220	64			
96022	28	5	23.081	15.22	3.98	0.207	0.13	0.127	0.87	264	97		1.12	0.00
96022	28	17	23.504	15.53	4.17	0.236	0.27	0.140	0.97	256	95		0.32	1.36
96022	29	2	24.275	15.66	4.54	0.248	0.27	0.122	1.38	252	94		0.88	0.35
96022	29	27	25.437	16.12	4.17	0.32	0.45	0.141	1.87	245	93		0.80	0.26
96022	30	9	25.340	15.71	3.65	0.276	0.27	0.191	1.40	253	96		0.64	0.70
96022	30	32	26.270	14.85	3.13	0.266	0.46	0.167	1.46	257	96		0.96	0.22
96022	30	72	27.214	14.17	3.40	0.38	0.60	0.155	1.30	259	96			
96022	31	1	25.850	14.72	3.64	0.288	0.36	0.153	1.25	258	95		1.52	0.61
96022	31	7	27.572	14.13	3.31	0.37	0.63	0.156	1.39	263	97		0.32	0.58
96022	31	27	28.491	13.10	3.09	0.43	0.70	0.152	1.26	265	97		0.96	0.00
96022	32	1	28.428	12.98	3.20	0.38	0.69	0.208	1.12	269	98		0.32	0.52
96022	32	7	28.584	12.91	3.10	0.45	0.67	0.180	1.13	270	98		0.48	0.42
96022	33	1	25.496	15.60	3.73	0.295	0.29	0.170	2.14	256	96		0.64	0.59
96022	33	5	25.736	15.29	3.75	0.32	0.33	0.167	1.62	293	110		0.96	0.27
96022	33	14	26.548	14.77	4.38	0.39	0.56	0.201	2.02	219	82		0.72	0.40
96022	34	1	24.560	15.99	4.10	0.256	0.29	0.165	1.52	255	96		0.80	0.38

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
96022	34	15	25.224	15.74	4.19	0.41	0.33	0.171	1.86	235	89		0.40	0.89
96022	34	36	26.539	14.73	3.74	0.40	0.55	0.239	1.42	256	95		0.72	0.51
96022	35	7	22.858	15.19	4.23	0.255	0.05	0.096	0.55	270	99		0.72	0.34
96022	35	40	24.964	6.73	8.09	0.64	5.10	0.124	0.51	274	85		0.24	0.00
96022	35	75	25.392	2.53	8.29	0.70	6.16	0.128	0.49	307	86			
96022	35	100	25.585	0.71	9.76	0.79	6.78	0.124	0.52	326	87			
96022	35	150	25.616	0.44	9.88	0.79	6.89	0.118	0.54	327	87			
96022	35	177	25.624	0.41	10.2	0.84	7.03	0.343	0.74	326	86			
96022	36	2	22.719	14.82	4.36	0.242	0.42	0.154	0.82	267	97		1.12	0.22
96022	36	20	23.109	13.97	4.28	0.31	1.03	0.206	0.75	260	93		0.72	0.18
96022	37	7	22.264	13.87	3.86	0.222	0.31	0.173	0.62	268	96		0.64	0.59
96022	37	25	22.455	13.90	4.29	0.247	0.51	0.186	0.77	266	95		0.64	0.70
96022	38	5	21.428	13.97	4.63	0.205	0.06	0.125	0.61	273	97		1.36	0.60
96022	38	15	22.403	13.85	4.79	0.32	1.19	0.327	0.65	257	92		0.88	0.00
96022	39	1	19.557	13.88	7.70	0.191	0.67	0.241	1.79	266	93		1.28	0.68
96022	39	5	21.788	13.83	4.46	0.204	0.40	0.150	0.58	268	95		1.20	1.21
96022	39	10	21.971	13.69	4.79	0.31	0.76	0.273	0.72	260	92		0.72	0.57
96022	40	1	9.229	14.10	13.0	0.213	1.81	0.670	4.29	272	90		0.48	1.93
96022	40	5	17.807	15.81	12.8	0.38	1.19	0.313	7.21	222	80		0.72	1.30
96022	41	1	9.959	12.23	15.2	0.180	1.49	0.259	4.87	290	92		1.04	0.87
96022	41	4	17.436	15.40	12.5	0.32	1.07	0.242	5.59	245	87		3.36	0.00
96022	42	1	14.877	13.86	14.6	0.219	1.12	0.229	4.21	277	94		2.88	1.77
96022	42	5	20.777	14.96	7.85	0.38	0.99	0.297	3.98	213	77		0.40	1.34
96022	43	1	21.477	14.67	3.15	0.152	0.11	0.063	0.87	275	99		0.64	0.82
96022	43	5	21.489	14.62	3.23	0.174	0.14	0.071	0.87	273	98		1.44	0.24
96022	43	15	21.555	14.43	3.36	0.177	0.30	0.104	0.85	268	96		0.64	0.87
96022	43	56	22.337	7.35	12.0	0.83	5.14	0.083	0.86	232	72			
96022	44	1	21.181	14.87	3.71	0.149	0.12	0.068	0.90	276	100		0.80	0.49
96022	44	5	21.330	14.90	3.47	0.151	0.19	0.140	0.90	273	99		0.88	0.86
96022	44	40	22.027	6.18	15.3	0.91	5.80	0.133	0.88	209	62			
96022	45	1	21.451		3.27	0.156	0.13	0.064	0.92	274			1.52	0.27
96022	45	5	21.457	14.79	3.20	0.178	0.24	0.097	0.81	274	99		0.96	0.66
96022	45	25	22.003	9.25	9.79	0.62	4.10	0.170	0.84	226	73		0.64	0.00
96022	46	5	21.702	14.52	2.94	0.156	0.16	0.065	0.84	275	99		1.28	0.46

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
96022	46	25	22.193	10.32	5.09	0.39	2.13	0.155	0.90	261	86		0.32	0.02
96022	46	40	22.375	7.40	6.05	0.48	2.90	0.107	0.89	270	83		0.16	0.00
96022	47	5	21.810	14.60	2.84	0.175	0.16	0.061	0.79	277	100		0.80	0.66
96022	47	15	21.823	14.39	2.63	0.179	0.30	0.093	0.79	273	98		1.60	0.00
96022	47	50	22.467	5.53	7.42	0.55	3.42	0.084	0.86	256	76			
96022	47	99	22.554	4.56	8.66	0.62	4.13	0.084	0.82	279	80			
96022	47	135	22.579	4.26	9.69	0.69	4.48	0.101	0.81	278	79			
96022	48	1	21.778	14.55	2.84	0.155	0.50	0.195	0.97	275	99		0.32	1.25
96022	48	5	21.777	14.54	2.99	0.167	0.29	0.067	0.86	276	99		0.96	0.50
96022	48	25	22.099	11.25	4.80	0.36	1.81	0.238	0.87	263	88		0.32	0.02
96022	48	50	22.455	5.74	7.13	0.54	3.50	0.085	0.80	275	82			
96022	48	65	22.500	5.17	7.08	0.52	3.38	0.100	0.78	276	81			
96022	49	1	21.826	14.53	2.74	0.160	0.22	0.070	0.94	277	100		0.16	1.58
96022	49	5	21.826	14.53	2.69	0.156	0.19	0.055	0.96	276	99		0.96	0.72
96022	49	20	21.847	13.91	2.98	0.187	0.48	0.098	0.91	270	96		1.12	0.11
96022	49	40	22.348	7.30	6.21	0.47	3.17	0.171	0.87	269	83			
96022	50	1	21.872	13.90	3.44	0.194	0.26	0.065	0.97	277	98		1.36	0.38
96022	50	5	21.874	13.90	3.43	0.191	0.28	0.146	0.96	277	98		0.40	1.28
96022	50	30	22.977	14.12	4.81	0.32	1.47	0.243	0.98	256	92		0.48	0.70
96022	50	55	24.222	12.59	13.7	0.89	6.28	0.133	0.95	204	72			
96022	51	1	21.815	13.82	3.00	0.167	0.35	0.242	0.94	258	92		0.80	0.94
96022	51	5	21.815	13.96	3.24	0.164	0.31	0.100	0.86	275	98		0.96	0.61
96022	51	40	22.372	5.34	7.47	0.54	3.43	0.142	0.76	276	81			
96022	51	68	22.342	4.08	10.4	0.65	4.12	0.075	0.90	268	76			
96022	53	1	21.645	13.17	4.16	0.201	0.34	0.159	0.90	281	98		0.40	1.00
96022	53	5	21.654	13.19	4.12	0.199	0.34	0.105	0.87	280	98		0.24	1.11
96022	53	25	22.179	9.21	5.88	0.40	2.33	0.166	0.76	266	85		0.00	0.45
96022	55	1	21.391	13.12	4.79	0.217	0.27	0.094	0.87	283	99		0.24	0.94
96022	55	5	21.391	13.13	4.75	0.195	0.28	0.096	0.83	282	98		0.32	1.31
96022	55	17	21.936	11.54	4.94	0.293	1.23	0.173	0.84				0.16	0.74
96022	56	1	18.660	11.75	10.6	0.248	1.02	0.198	1.02	285	95		0.16	0.57
96022	56	8	21.272	12.29	6.16	0.297	1.00	0.274	0.83	270	93		0.40	0.61
96022	57	1	21.278	13.14	5.54	0.237	0.43	0.130	0.85	279	97		0.88	0.02
96022	57	5	21.274	12.98	5.61	0.226	0.41	0.122	0.79	278	97		0.64	0.20

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
96022	57	25	21.996	9.94	7.00	0.43	2.48	0.196	0.77	257	84		0.24	0.04
96022	57	75	22.180	6.11	10.7	0.77	4.54	0.124	0.78	252	75			
96022	58	1	21.006	13.18	5.48	0.282	0.42	0.187	0.89	283	98		0.16	0.85
96022	58	5	21.003	13.06	5.91	0.212	0.25	0.100	0.83	284	99		0.48	0.81
96022	58	34	22.032	9.69	7.75	0.52	2.71	0.216	0.75	255	83		0.40	0.00
96022	59	1	20.688	13.44	7.17	0.252	0.23	0.070	0.79	283	99		0.64	1.15
96022	59	5	20.749	13.12	7.15	0.298	0.27	0.089	0.82	282	98		1.20	1.15
96022	59	25	21.663		13.3	1.02	4.09	0.810	4.01	192			0.16	1.02
96022	60	1	20.732	13.18	7.59	0.272	0.24	0.087	0.76	285	99		0.56	0.90
96022	60	5	20.759	12.88	7.44	0.33	0.35	0.088	0.93	263	91		0.56	1.35
96022	61	1	21.456	13.84	4.53	0.188	0.58	0.140	0.78	276	98		0.64	1.32
96022	61	5	21.456	13.84	4.49	0.270	0.46	0.139	1.01	276	98		0.88	1.08
96022	61	15	21.494	13.84	4.36	0.199	0.37	0.128	0.77	277	98		1.20	0.54
96022	61	26	21.818	12.15	5.54	0.32	1.35	0.210	0.86	262	90		0.24	0.83
96022	62	1	21.061	14.06	5.10	0.214	0.79	0.146	0.94	273	97		2.80	0.00
96022	62	5	21.058	14.06	4.99	0.166	0.50	0.153	0.92	274	97		3.12	0.00
96022	62	13	21.061	14.07	5.06	0.177	0.46	0.160	0.93	272	97		0.64	1.55
96022	63	5	20.632	14.58	4.87	0.110	0.36	0.141	0.91	273	98		0.88	1.59
96022	63	17	21.627	13.70	10.6	0.63	2.69	0.934	2.15	209	74		2.72	0.00
96022	64	1	19.819	14.14	4.75	0.066	0.24	0.068	0.72	287	101		0.96	2.01
96022	64	5	19.831	14.11	4.80	0.144	0.34	0.076	0.76	285	100		2.88	0.65
96022	64	20	22.286	5.47	13.7	1.50	9.07	0.128	0.70	146	43		0.24	1.83
97015	1	1	20.242	9.16	3.73	0.139	0.00	0.045	0.86	331	105			
97015	1	5	21.137	7.47	3.51	0.157	0.00	0.044	0.73	352	108			
97015	1	27	23.960	0.84	4.92	0.79	1.67	0.136	7.38	303	80			
97015	6	1	17.548	10.18	4.96	0.117	0.00	0.037	0.57	347	111			
97015	6	4	18.544	7.97	4.18	0.169	0.00	0.037	0.54	362	110			
97015	6	10	21.317	3.24	1.62	0.45	0.70	0.334	0.67	370	102	0.066		
97015	6	15	22.199	2.47	2.04	1.16	4.38	0.320	1.44	312	85	0.062		
97015	6	20	22.764	3.02	29.2	5.43	1.81	0.270	40	80	22	0.064		
97015	6	35	23.076	3.23	36.9	12.2	0.00	0.200	113	0	0	62		
97015	8	1	12.453	13.79	8.75	0.030	0.00	0.037	0.58	321	108			
97015	8	8	17.840	5.96	34.5	2.68	12.1	0.094	0.56	95	27	0.042		

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
97015	8	15	17.914	5.86	35.2	2.91	14.6	0.094	0.51	69	20	0.039		
97015	13	4	20.848	7.09	3.80	0.116	0.00		0.45	357	108			
97015	13	8	21.834	5.63	2.96	0.238	0.00	0.066	0.57	371	109			
97015	21	1	20.889		3.17	0.157	0.00	0.037	0.47	352				
97015	21	7	21.284		3.27	0.153	0.00	0.066	0.55	358				
97015	22	1	20.094		2.73	0.209	0.00	0.037	0.54	357				
97015	22	5	20.085		2.75	0.171	0.00			357				
97015	23	1	17.221		3.59	0.088	0.00	0.037	0.54	333				
97015	23	4	18.072		3.16	0.126	0.00	0.037	0.54	359				
97015	24	1	17.391		3.55	0.077	0.00	0.066	0.63	324				
97015	24	7	20.635		2.67	0.264	0.00	0.037	0.51	382				
97015	25	0	2.191		9.3	0.076	0.00		0.70					
97015	26	0	14.904		1.99	0.178	0.00	0.066	1.78					
97015	27	0	0.721		15.4	0.018	0.61	0.066	1.30					
97015	28	0	10.965		3.17	0.106	0.02	0.051	1.48					
97015	29	0	3.524		9.98	0.017	0.00	0.037	0.40					
97015	30	0	0.187		47.7	0.000	1.54	0.037	0.37					
97015	31	1	20.567	9.76	0.20	0.083	0.00	0.037	0.43	352	113			
97015	31	5	20.665	9.78	0.20	0.109	0.00	0.037	0.49	326	105			
97015	31	17	21.585	0.88	6.56	0.88	0.49	0.066	0.47	301	78			
97015	32	5	20.914	8.74	0.37	0.149	0.06	0.037	0.50	342	108			
97015	32	15	21.143	5.71	0.17	0.239	0.00	0.037	0.43	370	109			
97015	33	1	21.088		3.51	0.204	0.00	0.037	0.72	347				
97015	33	5	21.087		3.46	0.173	0.00	0.037	0.58	348				
97015	33	15	21.100		3.16	0.177	0.00	0.037	0.76	346				
97015	33	37	21.623		5.92	0.34	0.16	0.122	1.18	345				
97015	34	1	21.001		1.23	0.135	0.00	0.037	0.56	341				
97015	34	5	21.011		1.40	0.152	0.00	0.037	0.65	342				
97015	34	17	21.146		0.50	0.33	0.00	0.037	0.81	364				
97015	35	1	20.657		0.00	0.083	0.00	0.037	0.53	339				
97015	35	5	20.649		0.04	0.081	0.00	0.037	0.49	339				
97015	35	10	21.112		0.00	0.189	0.00	0.037	0.68	387				
97052	1	1	21.304	15.21	2.51	0.117	0.00	0.037	0.67	266	97			

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
97052	1	5	21.310	15.21	2.32	0.122	0.00	0.037	0.57	266	97			
97052	1	15	21.989	4.59	14.4	1.63	6.36	0.122	0.67	138	40			
97052	1	25	21.972	4.03	19.6	2.27	11.6	0.066	0.67	124	35			
97052	2	1	21.336	15.06	2.66	0.163	0.00		0.58	264	96			
97052	2	5	21.337	15.06	2.65	0.162	0.15	0.037	0.72	264	96			
97052	2	10	21.798	10.27	7.57	0.80	0.57	0.136	1.57	206	68			
97052	3	5	21.419	14.80	3.49	0.158	0.04	0.066	0.58	264	95			
97052	3	18	21.839	10.37	11.2	0.85	2.96	0.490	0.67	215	71			
97052	4	1	21.459	15.14	2.76	0.129	0.03	0.063	0.69	271	98			
97052	4	5	21.457	15.13	2.81	0.144	0.01	0.056	0.45	271	98			
97052	4	15	21.560	12.31	4.13	0.256	0.20	0.107	0.53	256	88			
97052	4	24	21.938	10.41	8.44	0.64	2.38	0.292	0.67	242	80			
97052	5	1	21.559	15.12	2.48	0.105	0.01	0.056	0.51	272	99			
97052	5	5	21.558	15.10	2.50	0.106	0.00	0.056	0.47	272	99			
97052	5	15	21.559	15.01	2.44	0.098	0.03	0.056	0.51	270	98			
97052	5	41	22.090	7.30	8.76	0.67	3.65	0.120	0.48	264	81			
97052	6	125	22.225		10.1	0.80	5.04	0.056	0.77	295				
97052	6	150	22.223		10.8	0.86	5.38	0.069	0.51	297				
97052	8	1	21.905	14.88	3.65	0.169	0.02	0.056	0.71	268	97			
97052	8	5	21.923	14.86	3.66	0.177	0.02	0.056	0.70	269	97			
97052	8	11	22.761	15.34	4.11	0.260	0.27	0.133	0.76	251	93			
97052	9	1	21.873	15.18	4.20	0.229	0.01	0.056	0.62	266	97			
97052	9	8	22.593	15.77	5.00	0.37	0.27	0.120	0.66	244	90			
97052	10	1	21.103	15.04	5.01	0.31	0.02	0.056	0.58	263	95			
97052	10	5	21.222	15.18	4.68	0.275	0.01	0.056	0.56	253	92			
97052	11	1	20.217	14.86	3.76	0.110	0.01	0.056	0.71	276	99			
97052	11	4	20.209	14.86	3.55	0.102	0.02	0.056	0.73	275	99			
97052	17	0	1.670		34.9	0.077	0.19	0.017	0.72					
97052	18	0	19.319		6.63	0.250	0.15	0.069	2.20					
97052	19	0	7.610		17.5	0.064	0.11	0.040	0.94					
97052	20	0	0.657		40.5	0.066	0.89	0.063	1.01					
97052	21	0	13.824	16.28	14.5	0.126	0.18	0.069	0.76					
97052	22	0	0.219		61	0.055	1.96	0.059	0.46					
97052	23	1	21.705	15.07	6.78	0.44	0.04	0.056	0.72	259	94			

Survey	Stn	z (m)	Salinity	Temp (°C)	Si (µM)	PO_4 (µM)	NO_3+NO_2 (µM)	NO_2 (µM)	NH_3 (µM)	O_2 (µM)	O2 Satn (%)	H_2S (µM)	Chl *a* (µg/L)	Phaeo (µg/L)
97052	23	5	21.712	15.13	6.71	0.44	0.01	0.056	0.69	259	94	0.090		
97052	23	10	22.589	11.81	8.07	0.86	1.24	0.275	0.92	181	62	0.095		
97052	23	15	22.455	4.60	15.0	3.28	24.6	0.142	0.86	47	14	0.13		
97052	23	20	22.680	3.06	29.1	4.48	5.50	0.958	27	14	4	0.16		
97052	23	25	22.964	3.13	55	10.0	0.35	0.303	98	0	0	25		
97052	23	43	23.053	3.18	85	14.0	0.17	0.359	136	0	0	30		
97052	24	37	22.981	2.12	37.5	2.31	15.7	0.138	0.60	111	30	0.088		
97052	26	1	23.017	15.15	3.13	0.140	0.00	0.056	0.48	270	99			
97052	26	5	23.478	15.63	3.54	0.228	0.11	0.056	0.52	256	95			
97052	26	26	24.102	6.69	38.8	3.88	16.9	0.162	5.75	52	16			
97052	27	1	20.853	15.01	11.0	0.182	0.07	0.069	0.44	273	99			
97052	27	5	23.262	15.69	4.14	0.229	0.01	0.063	0.45	265	99			
97052	27	11	23.992	16.14	5.49	0.55	0.25	0.125	0.78	218	82	0.50		
97052	30	1	18.851	14.69	9.49	2.23	0.02	0.075	0.60	279	99			
97052	30	8	19.104	13.49	26.2	3.53	5.50	0.081	0.79	63	22			
97052	30	19	19.542	12.99	24.9	3.34	6.43	0.120	1.10	84	29	0.12		

Appendix C. Data for trace metals and suspended particulate matter (SPM) for Bras d'Or Lakes Surveys 95908 and 97052.

Survey	Stn	z (m)	Salinity	Temp (°C)	O_2 (μM)	Cd (nM)	Cu (nM)	Fe (nM)	Mn (nM)	Ni (nM)	Pb (nM)	Zn (nM)	Hg (pM)	SPM (mg/L)
95908	1	5	21.595	15.60	264	0.160	4.72	34	55	3.58	0.048	26.0	3.49	1.14
95908	3	5	22.012	15.60	268	0.133	5.19	9.0	9.5	3.24	0.019	3.80	4.74	0.76
95908	3	30	23.120	1.80	141	0.214	4.88	12.0	72	4.09	0.019	12.2	3.09	0.32
95908	5	5	21.253	15.30	280	0.133	4.72	60	21.8	3.41	0.092	9.50	3.49	0.72
95908	7	10	23.350	16.30	238	0.160	4.56	20.1	25.5	3.58	0.019	3.80	2.24	0.81
95908	8	9	23.221	16.20	245	0.142	4.25	10.9	9.1	4.60	0.039	5.00	2.99	0.75
95908	9	5	22.790	15.90	277	0.463	4.72	13.1	14.7	5.28	0.019	5.80	4.29	0.99
95908	11	7	23.073	15.40	277	0.169	4.88	8.1	12.6	4.26	0.101	20.2	5.33	0.66
95908	11	25	25.042	10.20	247	0.311	3.93	6.4	7.8	3.75	0.029	10.8		0.59
95908	12	7	21.778	15.50	255	0.142	4.88	26.3	50	2.73	0.019	3.20	4.64	1.13
95908	13	5	20.968		267	0.107	3.78	43	31	3.07	0.058	28.8	4.29	1.18
95908	14	3	21.188	15.30	270	0.142	4.88	25.6	26.4	2.73	0.150	32.9	4.09	1.12
95908	17	5	21.933	14.60	283	0.178	5.27	8.1	13.0	3.83	0.097	5.60	5.33	0.36
97052	1	25	21.972	4.03	124	0.400	5.17	111	690	4.49	0.111	17.5		
97052	10	5	21.222	15.18	253	0.169	6.48	16.4	66	4.39	0.065	5.47		
97052	23	43	23.053	3.18	0	0.058	0.50	2220	2140	3.49	0.049	3.04		
97052	24	37	22.981	2.12	111	0.289	3.95	41	78	5.09	0.053	11.4		
97052	26	26	24.102	6.69	52	0.369	5.48	127	540	6.80	0.140	14.5		
97052	27	11	23.992	16.14	218	0.182	6.93	8.1	78	4.02	0.065	5.25		
97052	30	19	19.542	12.99	84	0.205	18.41	225	350	4.76	0.082	13.6		